Research Report

An AI Taxonomy for Criminal Justice

Principled Use of AI in the Criminal Justice System

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About This Report

Artificial intelligence (AI) technologies are being increasingly embedded within the criminal justice system, shaping how information is collected, analyzed, and used in decisions that affect public safety, institutional operations, and individual liberties. Despite this adoption, there is limited shared understanding of how different AI tools function, where they are deployed, and how their risks and benefits vary across the criminal justice continuum. This report helps to address that gap by providing an AI taxonomy in criminal justice organized by function—that is, where in the justice process these tools intervene and what role they play.

This report is designed primarily for criminal justice system leaders and decision-makers responsible for evaluating, procuring, and implementing AI technologies—including police chiefs, court and corrections administrators, chief judges, district attorneys, chief public defenders, and technology procurement staff—as well as state policymakers making technology decisions for their justice system. It is important for these decision-makers to understand current and emerging AI use in the criminal justice system, assess governance and equity implications, and make informed choices about whether, how, and under what conditions to adopt or modify AI tools. The taxonomy also serves researchers, technology leaders, community-based organizations, and advocates working to ensure that AI implementation aligns with fairness and due process principles. It is designed to support informed oversight, guide standards development, and facilitate more deliberate and transparent decision-making as AI capabilities continue to evolve.

RAND Education, Employment, and Infrastructure

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Summary

Artificial intelligence (AI) is playing a growing role within the criminal justice system, supporting activities ranging from data management and investigative analysis to risk assessment, supervision, and administrative decision-making. While these AI tools differ widely in their technical sophistication, intended use, and influence on human judgment, they are often discussed and governed as if they were a single category of technology. The argument for agencies adopting AI includes promises of efficiency, consistency, and improved decision support. But the promotion of such purported benefits has outpaced the development of shared standards for transparency, accountability, and evaluation. As a result, practitioners and policymakers face challenges in understanding where and when AI is being used in criminal justice, how AI is shaping decisions, and what risks and benefits accompany AI applications in various criminal justice functions.

Issue

While comprehensive data on AI adoption rates among criminal justice entities remain limited, the documented deployment of multiple AI systems across law enforcement, courts, and corrections without corresponding governance frameworks suggests that adoption has outpaced the development of shared standards for evaluation and oversight. Justice system leaders and policymakers often lack clear criteria for evaluating whether specific tools are appropriate, effective, transparent, and equitable, even as AI-influenced decisions carry implications for individual liberty, public trust, and institutional legitimacy.

Approach

To develop this taxonomy, we conducted an iterative process combining an environmental scan of AI applications across academic literature, policy documents, and practitioner reports with structured functional analysis. As patterns emerged, applications were organized by the criminal justice functions and decisions they inform. This environmental scan identified illustrative use cases where AI tools are being used, piloted, studied, or made commercially available for potential use across law enforcement, courts, corrections, and community supervision. By organizing applications by their function rather than by sector or technology type, this approach allowed us to capture applications across criminal justice institutions and identify where similar technologies may serve different purposes in different contexts.

Key Findings

- **Risks to equity in using complex AI systems and algorithms are concentrated in high-stakes criminal justice functions** (where system design, data provenance, and deployment context may produce disparate impacts). For example, risk assessment tools, predictive policing, and surveillance programs operate in areas of the criminal justice system where human judgment traditionally had the greatest consequences (i.e., enforcement, pretrial, and sentencing decisions).
- **Structural equity risk varies by data provenance and criminal justice function.** AI applications relying on past criminal justice data (i.e., arrests, charges, supervision violations) tend to systematically reproduce racial and socioeconomic disparities. Real-world evidence from Los Angeles and Chicago, for example, shows that predictive policing models can reinforce biased enforcement patterns.
- **Judicial decision-makers appear to be cautiously engaging with AI in selected judicial and sentencing decision-making processes.** Available research indicates that to protect due process, judges are often treating algorithmic recommendations as advice rather than as binding decisions.
- **Criminal justice agencies have adopted AI more slowly in administrative and training functions despite their relatively low structural equity risk.** Routine court and supervision functions—scheduling, record keeping, and training—feature manual and routinized workflows and involve administrative, data-processing tasks with limited direct effects on liberty or rights, where structural equity risk is comparatively low. Some pilots of AI in these areas (e.g., Syracuse University's National Science Foundation-funded fair scheduling study) show promise, but criminal justice agencies have not yet widely adopted these applications.
- **Research has documented significant oversight and transparency gaps across criminal justice agencies.** The GAO has found that federal agencies struggle to prevent bias in their AI systems and do not disclose how such systems work. Stakeholders widely recognize that bias and a lack of transparency are among the biggest barriers to safe and equitable AI use in the criminal justice system.

Recommendations

- **Develop justice-specific AI governance standards calibrated to functional risk.** Different AI applications in criminal justice pose different risks. Governance frameworks should reflect these differences with stricter transparency, validation, and oversight requirements for high-stakes decisions and streamlined approaches for routine administrative tasks.
- **Prioritize safeguards over expansion in high-risk areas**. Agencies should not expand use of prediction and risk assessment tools without first establishing reliable auditing systems, human oversight mechanisms, and redress pathways. Past experiences show premature deployment has caused disproportionate harm to the most vulnerable populations.
- **Clarify governance frameworks for low-risk administrative functions**. Ambiguity about which AI uses are appropriate may cause agencies to underutilize administrative tools such as scheduling software and document processing, missing opportunities to

improve efficiency. By providing clear guidance on appropriate AI uses in criminal justice domain, agencies can confidently leverage AI for routine operations while maintaining essential safeguards for high-stakes decisions.

- **Establish infrastructure for ongoing performance monitoring and validation.** Governance should require ongoing bias audits, performance tracking across demographic groups, and mechanisms to flag and correct problems throughout a system's operational life, not just at deployment.
- **Invest in AI literacy for criminal justice professionals.** Professionals need training on how sector-specific AI works, what its limitations are, and how to meaningfully challenge or verify algorithmic recommendations in their daily practice.
- **Establish explicit governance protections for decisions that affect individual liberty.** Algorithms alone should never determine guilt, sentencing, or charging decisions. When AI does inform judicial or prosecutorial outcomes, governance frameworks should make clear that courts are to disclose this in their findings and defense counsel should have full access to the AI tools and reasoning used.

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Chapter 1. Introduction

Artificial intelligence (AI) technologies are playing a growing role across many parts of the criminal justice system—used, for example, to help law enforcement conduct predictive analysis, assist courts in risk assessment, and support correctional and community supervision in monitoring rehabilitation.[1] The expansion of AI reflects a broader effort to leverage data-driven tools for greater efficiency, consistency, and insight across justice processes. When designed and implemented responsibly, AI holds potential to improve decision quality, allocate limited resources more efficiently, and, in some cases, help reduce human bias by using empirical data.

Despite these potential benefits, AI use in the criminal justice context raises significant ethical, legal, and social concerns related to fairness, transparency, accountability, and due process.[2] Because these technologies operate within systems that can directly affect individual liberty, even minor errors or biases can have serious consequences. Given this, special care is required when using AI in the criminal justice system.

The rapid adoption of AI tools in criminal justice contexts has outpaced shared understanding of their function, risks, and benefits and common frameworks for their governance. This gap leaves many systems operating in a regulatory vacuum where there is potential for irreversible, tangible harms.[3] These concerns are particularly acute when core government functions such as policing, sentencing, or supervision are delegated to algorithmic systems that can affect rights and freedoms.[4] In response, the Council on Criminal Justice (CCJ), in partnership with RAND Corporation, launched a national Task Force on Artificial Intelligence in June 2025 to develop

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[1] U.S. Department of Justice. (2024, December 3). *Artificial intelligence and criminal justice: Final report*. Office of Legal Policy. https://www.justice.gov/olp/media/1381796/dl

[2] Adler, J., Antoine, J., & Al-Saadoon, L. (2024). *Minding the machines: AI and the criminal legal space.* Washington, D.C.: Center for Justice Innovation. https://www.innovatingjustice.org/resources/minding-the-machines-ai-and-the-criminal-legal-space/; Rodrigues, R. (2020). Legal and human rights issues of AI: Gaps, challenges and vulnerabilities. *Journal of Responsible Technology, 4.* https://doi.org/10.1016/j.jrt.2020.100005; United Nations Human Rights Council. (2020, June 18). *Racial discrimination and emerging digital technologies: A human rights analysis* (Report No. A/HRC/44/57). https://docs.un.org/en/A/HRC/44/57

[3] Russell, K. (2025, March–April). *The risks and failures of AI in the criminal justice system: Resulting from flawed surveillance technologies. GPSolo Magazine*. American Bar Association. https://www.americanbar.org/groups/gpsolo/resources/magazine/2025-mar-apr/ai-complex-role-criminal-law-data-discretion-due-process/; Sherer, J.A., Westfield, S., Hoyt, Z., Kim, J., Price, K., & Wald, F. (2025). A model approach to attorney AI practice – Function or folly in an age of AI? *California Western Law Review, 61*(2), 353-379. https://scholarlycommons.law.cwsl.edu/cgi/viewcontent.cgi?article=1790&context=cwlr.

[4] Francis, C., Froomkin, D., Pales, E., Rashkovich, B.D., Sung, K., & Wooten, K. (2022). *Algorithmic accountability: The need for a new approach to transparency and accountability when government functions are performed by algorithms*. Media Freedom and Information Access Clinic at Yale Law School. https://law.yale.edu/sites/default/files/area/center/mfia/document/algorithmic_accountability_report.pdf

principles, standards, and research guidance for AI use in the criminal justice system.[5] One step in this effort is establishing a taxonomy of AI applications.

A principled AI taxonomy can help criminal justice practitioners and policymakers understand existing and emerging tools to strengthen oversight structures. Federal agencies are already cataloging AI deployments across the federal government broadly[6] and researchers have been doing the same across the criminal justice system specifically,[7] yet the Government Accountability Office (GAO) has observed that agencies still struggle with ensuring transparency and preventing bias.[8] By showcasing existing and emerging systems and how they function, a taxonomy can establish a foundation for meaningful governance and innovation.

Defining Artificial Intelligence (AI)

To develop the taxonomy, we first need to define *artificial intelligence*, as there is no universally accepted definition.[9] We adopt CCJ's definition of AI as our foundational frame:

> "machine-based systems that operate with varying levels of autonomy[10], may exhibit adaptiveness after deployment, and infer from inputs how to generate outputs such as

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[5] To learn more about the work of the Task Force, visit https://councilonj.org/artificial-intelligence/.

[6] Several initiatives have sought to catalog the use of AI applications across the public sector, including the Federal AI Use Case Inventory developed under Executive Order 13960 (2020). These efforts underscore the importance of a systematic, government-wide approach to mapping AI deployments in support of transparency and oversight. As of December 16, 2024, federal agencies had reported more than 1700 AI use cases. *See* U.S. Office of the Federal Chief Information Officer. (2025, February 21). *2024 Federal AI Use Case Inventory*. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor]. https://doi.org/10.3886/E220361V1

[7] The Justice and AI Tracker (JAI-T), developed by Georgetown University's Evidence for Justice Lab, systematically documents AI tool use across law enforcement, courts, and corrections across the top 100 U.S. cities. For each identified tool, the database captures the type of AI technology, the specific city and jurisdiction, the vendor or tool name, the criminal justice domain, and full citations to verifiable sources. See Evidence for Justice Lab. (2025). *The Justice and AI Tracker (JAI-T).* McCourt School of Public Policy, Georgetown University. https://www.jai-t.com/.

[8] Wright, C., & Walsh, K. (2025, July). *Artificial intelligence: Generative AI use and management at federal agencies* (GAO-25-107653). Washington, D.C.: U.S. Government Accountability Office. https://www.gao.gov/assets/gao-25-107653.pdf

[9] Harris, L., & Wells, N. (2025). *Artificial intelligence (AI) taxonomy* (IG10077). Washington, D.C.: Library of Congress: Congressional Research Service. https://www.congress.gov/crs-product/IG10077

[10] There are different kinds of AI autonomy including data autonomy (update, source, and regulation), model autonomy (parameters and type), decision autonomy, and objective autonomy. *See* Walsh, K.R., Mahesh, S., & and Trumbach, C. (2021). Autonomy in AI systems. *The Journal of Technology Studies*, 47(1), 38-47. Similarly, there are also different levels of autonomy: Level 0: No autonomy – user directs and makes decisions at all times and AI is a tool. Level 1: Partial autonomy – AI is a collaborator in planning delegation and execution; Level 2: Conditional autonomy – AI is a consultant taking the lead but consults human for preferences; Level 3: High autonomy – AI is an approver and can be considered agentic as it mainly acts independently consulting human in pre-determined scenarios; and Level 4: Full autonomy – AI is fully independent with zero human intervention, with the possibility of some user monitoring. *See* Feng, K. J., McDonald, D. W., & Zhang, A. X. (2025). Levels of Autonomy for AI Agents. *arXiv.* https://doi.org/10.48550/arXiv.2506.12469.

predictions, content, recommendations, or decisions that can influence physical or virtual environments." [11]

This definition captures several types of AI systems (e.g., machine learning models, neural networks, and generative AI); emphasizes that AI systems can adapt and learn after deployment, which is particularly important for understanding how technologies used in a criminal justice context may produce unintended consequences over time; and recognizes that AI systems produce outputs capable of real-world consequences, making this definition directly applicable to criminal justice contexts.

We're using an intentionally broad definition of AI to include important criminal justice technologies that fall into a gray area of what is considered AI. This approach allows us to include risk assessment and prediction technologies both when they use statistical or machine-learning models to generate probabilistic outputs based on historical data and when they are more rules-based. Regarded as AI at their conception, early risk assessment and prediction tools serve as building blocks for newer, evolving AI systems, and provide instructive case studies on how technology adoption occurs in criminal justice. The approach used for this taxonomy also aligns with determinations of the U.S. Department of Justice.[12]

To operationalize the CCJ definition and enable a systemic examination of AI across criminal justice applications, we decomposed AI into six specific technological capabilities: computer vision, natural language processing, planning, prediction and classification, generative learning, and expert systems. We selected these six because they represent the primary mechanisms through which AI systems generate "outputs" as described in the CCJ definition (i.e., "predictions, content, recommendations, or decisions"). This framework is also consistent with prior RAND practice and provides a technically grounded foundation for analyzing diverse AI applications across criminal justice domains:[13]

1. Natural Language Processing (NLP): the ability of computers to understand, interpret, and generate human language, enabling tools like virtual assistance (e.g., Alexa or Siri) and sentiment analysis.
2. Predictive and Classification Systems (P/C): the assessment and categorization of current and future data to forecast patterns based on past data, such as identifying criminal hotspots or probable future offenders.
3. Planning (Plan): the AI capability of generating strategies to achieve specific goals, often used in operational logistics.

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[11] Council on Criminal Justice. (2025). *Principles for the use of AI in criminal justice*. https://councilоncj.org/principles-for-the-use-of-ai-in-criminal-justice/

[12] U.S. Department of Justice. (2024, December 3). *Artificial intelligence and criminal justice: Final report.* Office of Legal Policy. https://www.justice.gov/olp/media/1381796/dl

[13] Menthe, L., Zhang, L.A., Geist, E., Steier, J., Frank, A.B., Van Hegewald, E., Briggs, G.J., Scholl, K., Ashpari, Y., & Jacques, A. (2024). *Understanding the limits of artificial intelligence for warfighters* (RRA-1722-1). Santa Monica, CA: RAND Corporation. https://www.rand.org/pubs/research_reports/RRA1722-1.html

4. Computer Vision (CV): analyzes and processes visual data, such as facial recognition for identity verification.
5. Generative AI (GenAI): creates new content like text, audio, or other media.
6. Expert Systems (ES): rule-based systems designed to replicate decision-making, which can be applied to tasks like legal support or evidence assessment.[14]

We organize AI applications by criminal justice function and include metatags for each function on justice sector, automation level, data type, equity risk, transparency level, and AI capability (more detail on the taxonomy will be provided in Chapter 2). This structure helps visualize connections between activities, capabilities, and technologies that would otherwise be obscured when focusing on a single dimension alone, such as sector or data type.

Designing an AI Taxonomy for the Criminal Justice Context

A taxonomy for AI in the criminal justice system serves as a foundational tool for governance. In particular, a taxonomy that provides a way to understand what exists, where it is deployed, and what structural equity risks accompany different applications enables a more thoughtful approach to critical next steps. Next steps may include being able to better articulate what criminal justice functions would benefit from AI support, select tools that are aligned with those functions and equipped with appropriate safeguards, and build governance frameworks calibrated to actual deployment and risk levels.

In support of this, the taxonomy equips stakeholders to:

- facilitate comparison and evaluation across administrative, investigative, and adjudicative criminal justice domains, and clarify the corresponding oversight standards for each;
- align governance and regulatory precision with level of potential risk;
- clarify accountability and support transparency across stakeholders;
- strengthen due process through consistent legal reasoning across criminal justice domains;
- improve foresight and risk anticipation; and
- build public trust in a system where error can have profound human consequences.

Organization of this Report

This report presents a taxonomy of AI applications in criminal justice and identifies findings about risk concentration, governance gaps, and opportunity areas.

- Chapter 2 describes the design approach of the taxonomy along with the taxonomy's five core categories, illustrating how different AI applications function across law enforcement, courts, corrections, and community supervision.

[14] For completeness, we have included ESs in the taxonomy as it is a foundational form of AI, even though they fall outside the narrower definition of the CCJ.

- Chapter 3 presents observations and findings as revealed by the taxonomy, including that complex AI systems are concentrated in highest-stakes functions where oversight is weakest; AI is cautiously applied in legally contestable decisions; and equity risks are consistently highest in enforcement and surveillance applications. These findings establish the governance priorities throughout the report.
- Chapter 4 offers several opportunity areas for further investigation and governance development and presents overarching recommendations for practitioners and policymakers to advance responsible AI governance in criminal justice.

Chapter 2. Taxonomy Overview

This chapter introduces an AI taxonomy for criminal justice to clarify a rapidly expanding landscape. Rather than categorizing technologies by technical method or vendor claims, this taxonomy organizes AI applications by what they do within justice institutions and where they intervene in operational, investigative, adjudicative, and supportive processes. By organizing classification around function and institutional context, this taxonomy provides a foundation for stakeholders to assess governance needs, identify areas of concern, and discuss oversight and accountability with more precision. The full AI Taxonomy for the Criminal Justice Context is presented in Appendix A.1.

Of note, this taxonomy is descriptive rather than prescriptive. It should not be interpreted as endorsing or discouraging specific technologies or the companies responsible for their invention. Instead, the intent of this taxonomy is to provide an evidence-based foundation for informed governance decisions. By clarifying what AI systems exist and are emerging, and how they function, this taxonomy supports deliberation about which technologies align with justice and community values, and which may pose risks that outweigh their benefits. It is designed as a living framework that will continue to evolve as capabilities, oversight mechanisms, and ethical standards evolve.

Taxonomy Design Approach

We developed this taxonomy through an iterative process that combines an environmental scan with structured analysis. We first reviewed prior criminal justice technology taxonomies and documented AI applications in criminal justice.[15] We then conducted a broad scan of academic

[15] This includes foundational taxonomy work on corrections technology (Jackson, B. A., Russo, J., Hollywood, J. S., Woods, D., Silberglitt, R., Drake, G. B., Shaffer, J. S., Zaydman, M., & Chow, B. (2015). *Fostering innovation in community and institutional corrections: Identifying high-priority technology and other needs for the U.S. corrections sector* (RR-820-NIJ). Santa Monica, CA: RAND Corporation. https://www.rand.org/t/rr820), AI use cases in criminal justice catalogs and reports (Integrated Justice Information Systems (IJIS). (2025). *Artificial intelligence in justice and public safety use cases catalog.* https://ijis.org/community-resources/jpss-ai-use-case-catalog; U.S. Department of Justice. (2024). *Artificial intelligence and criminal justice: Final report*. Office of Legal Policy. https://www.justice.gov/olp/media/1381796/dl./), as well as other resources that address issues such as AI governance in justice contexts (Azzo, A. (2023). *Ethical framework aims to reduce bias in data-driven policing*. Northwestern University, Center for Advanced Study in the Behavioral Sciences. https://casmi.northwestern.edu/news/articles/2023/ethical-framework-aims-to-reduce-bias-in-data-driven-policing.html; Francis, C., Froomkin, D., Pales, E., Rashkovich, B. D., Sung, K., & Wooten, K. (2022). *Algorithmic accountability: The need for a new approach to transparency and accountability when government functions are performed by algorithms*. Yale Media Freedom and Information Access Clinic. https://law.yale.edu/sites/default/files/area/center/mfia/document/algorithmic_accountability_report.pdf; National Conference of State Legislatures. (n.d.). *Artificial intelligence and law enforcement: The federal and state landscape*. https://www.ncsl.org/civil-and-criminal-justice/artificial-intelligence-and-law-enforcement-the-federal-

literature, policy documents, practitioner reports, and documented deployments of AI in law enforcement, courts, corrections, and community supervision.

As patterns emerged, we organized findings by criminal justice functions: investigation, adjudication, sentencing, institutional management, supervision and monitoring, and service delivery and reentry. We then organized applications by the particular activity they perform within that function. Through iterative refinement, we expanded coverage to capture a spectrum of use, including documented deployments, pilot projects, research-stage applications, and commercially available capabilities that could influence criminal justice functions.

Taxonomy Core Categories

This approach yielded five core categories:

1) **Risk Assessment and Prediction** —where AI translates historical and behavioral data into probabilistic judgments to anticipate future outcomes
2) **Surveillance, Monitoring, and Identification** —where AI detects, tracks, or identifies individuals, objects, and behaviors
3) **Analysis and Decision Support** —where AI synthesizes information and generates recommendations to inform human decision makers
4) **Operations and Case Management** —where AI coordinates workflows, manages information flows, and structures administrative processes, and
5) **Training, Treatment, and Services** —where AI supports workforce development, individual rehabilitation, and reentry support.

Each category is further divided into various subcategories to capture distinct applications and technologies. This design is meant to capture the range of applications within that domain rather than only those currently deployed or easily documented.

Taxonomy Metadata

Each technology in the taxonomy contains metadata that capture key characteristics: sector, automation level, data type, equity risk, transparency level, and AI capability. These metadata are intended to capture the institutional context, technical function, and risk profile of each technology, enabling comparison across otherwise disparate applications. They help make clearer where governance, oversight, or safeguards is needed the most.

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and-state-landscape; OECD. (2025). *Governing with artificial intelligence*. Paris, France: OECD Publishing. https://doi.org/10.1787/795de142-en; United Nations Human Rights Council. (2020). *Racial discrimination and emerging digital technologies: A human rights analysis* (Report No. A/HRC/44/57). https://docs.un.org/en/A/HRC/44/57; and Perry, W.L., McInnis, B., Price, C.C., Smith, S.C., & Hollywood, J.S. (2013). *Predictive policing: The role of crime forecasting in law enforcement operations* (RR-233). Santa Monica, CA: RAND Corporation. https://www.rand.org/pubs/research_reports/RR233.html).

The **sector tags** show where a system is deployed in the criminal justice system, whether it be Law Enforcement/Policing (P), Courts (Ct), Corrections (Cr), or Community Supervision (CS). A single technology may operate across multiple sectors.

The **automation level tags** indicate the level of human involvement in decision-making. Fully Automated (FA) systems independently make and execute decisions with no human involvement (human out of the loop).[16] Human Review Required (HR) systems mean human review and approval are needed before actions are taken, preserving human veto or approval power over automated recommendations (human in the loop). Decision Support Only (DS) systems function as analytical aids, providing analysis, predictions, or recommendations for human decision makers to consider, with humans retaining full responsibility for final decisions and actions (human in the loop).[17]

The **data type tags** classify the type of inputs used by the system or technology, including Biometric (Bio), Behavioral (Beh), Geospatial (Geo), Communications (Com), Video (Vid), Structured (Str), and Educational (Edu). Data types are classified based on the primary source and nature of the input data used by each application, rather than by the technical architecture of the system or the downstream outputs. Where systems rely on multiple inputs, we tagged the subcategories with data types that most directly enable the AI capability or introduce distinct governance, privacy, or equity considerations. For more information on these data types and their selection for the taxonomy, please see Appendix B.

The **transparency level tags** indicate whether a system's reasoning and outputs are Explainable, or transparent with full insight (E), Partially Explainable, or semi-transparent with limited insight (P), or a "black box," opaque with no or severely limited insight (B).[18] The AI capability category identifies the primary technological approach the system employs as defined in the previous section.

The **equity risk tags** reflect the likelihood that system design, data origin, and deployment context will produce disparate impacts across demographic groups—particularly with respect to

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[16] As AI evolves, there is more discussion on agentic AI, which is a type of AI that uses reasoning, planning, and learning (adaptive) to achieve a specified goal. It differs from fully automated systems as described here in that fully automated systems are rule-based and static, executing fixed and repetitive workflows based on rigid instructions and unable to handle unexpected changes; agentic AI, by contrast, can "problem solve" to reach the desired outcome. We are not aware of any tools that claim to have agentic AI, and its use is not advised in the criminal justice context because it may obfuscate human agency, and ultimately responsibility, for irreversible, long-term harms of such tools. *See* Chan, A., Salganik, R., Markelius, A., Pang, C., Rajkumar, N., Krasheninnikov, D., Langosco, L., He, Z., Duan, Y., Carroll, M., Lin, M., Mayhew, A., Collins, K., Molamohammadi, M., Burden, J., Zhao, W., Rismani, S., Voudouris, K., Bhatt, U., Weller, A., Krueger, D., & Maharaj, T. (2023). Harms from increasingly agentic algorithmic systems. In *Proceedings of the 2023 ACM Conference on Fairness, Accountability, and Transparency* (pp. 651–666). Association for Computing Machinery. https://doi.org/10.1145/3593013.3594033

[17] Merat, N., Seppelt, B., Louw, T., Engström, J., Lee, J. D., Johansson, E., et al. (2019). The "Out-of-the-Loop" concept in automated driving: proposed definition, measures and implications. *Cognition, Technology & Work*, *21*(1), 87-98. https://doi.org/10.1007/s10111-018-0525-8

[18] Von Eschenbach, W.J. (2021). Transparency and the black box problem: Why we do not trust AI. *Philosophy & Technology, 34*(4), 1607-1622. https://doi.org/10.1007/s13347-021-00477-0

race, ethnicity, socioeconomic status, and other historically marginalized identities. These tags are not an assessment of actual equity outcomes but rather are intended to identify where equity risks are structurally probable based on what is known about system design, operational vulnerabilities, and the criminal justice function the system serves. High Equity Risk (H) means that the AI technology poses "grave civil liberties concerns."[19] These are systems typically used to inform high-stakes decisions concerning liberty and rights, operate in contexts where errors can propagate and compound, and often lack meaningful pathways for contesting or correcting errors before consequences accrue. Medium Equity Risk (M) refers to tools where design and deployment characteristics create moderate or context-specific risk to equity. These tools typically are used to guide moderate-stakes decisions (prioritization, triage, supervisory actions) or operate in positions where human discretion can mitigate harm, but where data quality, feedback loops, or error propagation still pose meaningful concerns to equity. Low Equity Risk (L) tools usually involve administrative, informational, or routine data-processing functions with limited direct effects on liberty, rights, or access to services. These systems are often characterized by high transparency, easily detectable errors, strong contestability, and governance structures that enable correction before consequential use. For more information on these equity tags and our methodological approach to assessing equity via fairness and distributional risk, please see Appendix C. To see how these risk factors present in the overall taxonomy, please see Appendix D.

1. Risk Assessment and Prediction

Risk assessment and prediction technologies represent the most mature, widely deployed, and consequential class of algorithms and AI applications in the criminal justice system.[20] Across individual-level assessments, population and geographic prediction, threat assessment, and preventative or empowerment applications, these tools share the common function of translating historical and behavioral data into probabilistic judgments intended to anticipate future outcomes. They are used across multiple justice sectors—i.e., law enforcement, policing, courts,

[19] Bannan, C. & Blase, M. (2020). *Automated intrusion, systemic discrimination: How untethered algorithms harm privacy and civil rights.* New America Open Technology Institute. https://d1y8sb8igg2f8e.cloudfront.net/documents/Automated_Intrusion_Systemic_Discrimination.pdf

[20] There is continued debate around whether risk assessment tools and predictive policing should be considered AI. For this report, risk assessment and prediction technologies are classified as AI when they use statistical or machine-learning models to infer the likelihood, severity, or timing of future outcomes based on historical and contextual data. Unlike rule-based or descriptive systems, these tools generate probabilistic or ranked outputs that reflect learned patterns and uncertainty, and are used to inform preventive, supervisory, or operational decisions. The use of inference and learning, rather than static rules, is the defining characteristic that brings these technologies within the scope of AI. This is also in line with similar determinations by the U.S. Department of Justice. *See* U.S. Department of Justice (2024, December 3). *Artificial intelligence and criminal justice: Final report*. Office of Legal Policy. https://www.justice.gov/olp/media/1381796/dl.

corrections, and community supervision—and often in high-volume and high-stakes environments where efficiency and consistency are valued but governance capacity is uneven.

1.1 Individual Risk Assessment

At the individual level (1.1), risk assessment tools estimate outcomes such as pretrial failure to appear or public safety risk, likelihood of recidivism or displaying violent behavior, institutional misconduct, and supervision violations. This taxonomy groups these under a single functional family because they share the common purpose of using structured and behavioral data to estimate the likelihood of adverse individual outcomes to inform decisions across the criminal justice system. These tools are most often justified by the need to promote public safety, reduce unnecessary detention or supervision intensity, and improve consistency in high-volume decision environments.[21]

In practice, they operate across multiple decision points. **Pretrial risk** models, for example, estimate flight or public safety risk to inform release and conditions decisions, whereas **recidivism prediction** tools support sentencing, classification, and supervision planning. **Violence risk assessment** tools are used across policing, courts, corrections, and supervision to identify elevated threat. **Institutional misconduct prediction** models attempt to anticipate rule violations or violence within correctional facilities. And **supervision violation risk** tools help criminal justice agencies efficiently manage individuals by predicting their likelihood of reoffending or violating supervision and thereby guiding the allocation of monitoring and interventions in the community.

Contemporary implementations rely on a combination of structured administrative data (e.g., prior arrests, charges, convictions, age, supervision history) and limited behavioral indicators, typically producing probabilistic risk scores or categorical classifications. Widely used examples include actuarial tools such as COMPAS (Correctional Offender Management Profiling for Alternative Sanctions), PSA (Public Safety Assessment), LSI-R (Level of Service Inventory-Revised), or any other instruments derived from them,–derived instruments, and internally developed state or county models embedded in case management systems.[22] Across contexts, these systems are generally framed as advisory, with human decision-makers retaining formal

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[21] U.S. Department of Justice (n.d.). *What Is Risk Assessment?* Bureau of Justice Assistance. https://bja.ojp.gov/program/psrac/basics/what-is-risk-assessment#understanding-risk-assessment

[22] These tools are often used for different purposes—e.g., LSI-R is typically used to guide treatment within a program, while COMPAS might influence initial placement or sentencing. *See* Serin, R. C., & Lowenkamp, C. T. (2015). Selecting and using risk and need assessments. *National Drug Court Institute*, *10*(1), 1-23; Lowenkamp, C. T., & Bechtel, K. (2007). The predictive validity of the LSI-R on a sample of offenders drawn from the records of the Iowa Department of Correction Data Management System. *Federal Probation*, *71*(3), 25-29; Blomberg, T., Bales, W., Mann, K., Meldrum, R., & Nedelec, J. (2010). *Validation of the COMPAS risk assessment classification instrument*. Tallahassee, FL: College of Criminology and Criminal Justice, Florida State University. https://criminology.fsu.edu/sites/g/files/upcbnu3076/files/2021-03/Validation-of-the-COMPAS-Risk-Assessment-Classification-Instrument.pdf; Advancing Pretrial Policy & Research. (n.d.). *About the public safety assessment*. https://www.advancingpretrial.org/about-the-psa/.

authority. Given their influence on liberty and safety decisions, individual-level risk assessment tools are classified as high-risk in the taxonomy because their outputs, though nominally advisory, often shape real-world judgments and outcomes across the justice system.[23]

1.2 Population and Geographic Prediction

At the population and geographic level (1.2), predictive tools shift the unit of analysis from individuals to places, systems, and aggregate demand, estimating where and when criminal activity or justice-system pressures are likely to occur and how resources will be needed over time. These tools are defined as data-driven forecasting systems that use historical geographic, temporal, and administrative data to predict crime patterns, identify high-risk locations, and anticipate system-level demand to inform deployment, planning, and capacity management decisions.[24] The taxonomy groups crime forecasting and predictive policing, hotspot identification, population management forecasting, and demand prediction into a single functional family because they rely on similar spatial and structured data inputs and are used to guide operational and managerial decisions rather than adjudicate individual culpability.

These tools are being used to support a wide range of decision-making across policing, courts, and corrections. **Crime forecasting and predictive policing** models estimate the likelihood of crime occurring in specific locations or time windows to inform patrol allocation and proactive enforcement strategies. **Hotspot identification** tools identify persistent or emerging high-activity areas using spatial clustering and trend analysis.[25] **Population management forecasting** focuses on aggregate correctional populations, projecting admissions, releases, and length of stay to support facility planning and overcrowding mitigation. **Demand prediction** tools estimate future caseloads, dockets, or service needs to inform staffing, scheduling, and budgetary decisions within courts and correctional systems.

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[23] While these predictive tools could pose significant risks to individual liberty, research shows that algorithm-augmented sentencing can reduce jail time for low-risk offenders. However, judges respond differently depending on whether algorithmic recommendations challenge or confirm their prior beliefs, which can narrow gender gaps but widen racial disparities. *See* Ho, Y-J., Jabr, W., & Zhang, Y. (2023). Algorithm-augmented sentencing: The role of human discretion in shaping judicial fairness and public safety. *SSRN.* http://dx.doi.org/10.2139/ssrn.4533047. Furthermore, a RAND study found that those identified on the "strategic subjects list" in Chicago Police Department's predictive policing pilot were not more or less likely to commit or be a victim of gun violence as anticipated, findings that ultimately led to the program being decommissioned. *See* Saunders, J., Hunt, P. & Hollywood, J.S. (2016). Predictions put into practice: A quasi-experimental evaluation of Chicago's predictive policing pilot. *Journal of Experimental Criminology, 12,* 347–37. https://doi.org/10.1007/s11292-016-9272-0.

[24] Jefferson, B. J. (2018). Predictable policing: Predictive crime mapping and geographies of policing and race. *Annals of the American Association of Geographers*, *108*(1), 1-16.

[25] Johnson, A., Egan, E., & Londoño, J. (2023). *Police tech: Exploring the opportunities and fact-checking the criticisms*. Information Technology and Innovation Foundation. https://www2.itif.org/2022-police-tech-future.pdf

Contemporary implementations include commercial and in-house predictive policing platforms such as PredPol (later named Geolitica),[26] spatial crime analysis dashboards used by police departments,[27] jail and prison population projection models used by state correctional agencies,[28] and court workload forecasting systems embedded within case and docket management platforms.[29] While these applications vary in equity and transparency risk, the taxonomy highlights an important distinction in this category. Geographically targeted enforcement tools are flagged as high risk due to their potential to reinforce feedback loops, algorithmic bias, and disproportionate surveillance of particular individuals and communities, as demonstrated by recent failures and public backlash in, for example, Los Angeles, Chicago, and Plainfield, New Jersey.[30] System-level forecasting tools oriented toward capacity planning and workload management, however, have been classified in the taxonomy as having low risk, but still carry some risk because they often rely on predictive inputs drawn from enforcement and sentencing data.[31]

1.3 Threat Assessment

At the threat assessment level (1.3), predictive tools are used to identify people or groups perceived to pose elevated security, safety, or operational risk based on patterns of behavior, association, or communication. These tools are defined as analytic systems that assess potential threats by combining structured records with behavioral and communications data to estimate the

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[26] PredPol (later renamed Geolitica) and HunchLab are examples of commercial predictive-policing tools providing hotspot mapping, near-repeat analysis, and crime forecasting capabilities used by several U.S. police departments. *See* Perry, W.L., McInnis, B., Price, C.C., Smith, S.C., & Hollywood, J.S. (2013). *Predictive policing: The role of crime forecasting in law enforcement operations* (RR-233). Santa Monica, CA: RAND Corporation. https://www.rand.org/pubs/research_reports/RR233.html

[27] Jacobson, M., Perbix, M., & Lissy, K. (2023). *Developing a concept of operations document. Designing an Effective law enforcement data dashboard.* Washington, DC: U.S. Department of Justice, Office of Community Oriented Policing Services. https://portal.cops.usdoj.gov/resourcecenter/content.ashx/cops-w1012-pub.pdf

[28] California Department of Corrections and Rehabilitation. (2026, January). *Fall 2025 population projections*. Division of Correctional Policy, Research, and Internal Oversight. https://www.cdcr.ca.gov/research/wp-content/uploads/sites/174/2026/01/Fall-2025-Population-Projections.pdf.

[29] Tyler Technologies. (n.d.). *The most complete courts & justice solutions* [Product brochure]. Tyler Technologies.https://www.tylertech.com/Portals/0/OpenContent/Files/3209/Odyssey-Overview-Brochure.pdf

[30] Los Angeles ended Operation LASER and PredPol after oversight findings of limited efficacy and biased targeting; Chicago eliminated its "Strategic Subjects List" and canceled the ShotSpotter contract over similar concerns; and an analysis in Plainfield, New Jersey, found Geolitica's predictive success rate below 0.5 percent. These cases reflect mounting evidence of feedback loops and bias driving policy retrenchment. *See* Thomas, G. (2024, October 15). "Politicians Move to Limit Predictive Policing After Years of Controversial Failures." *TechPolicy.Press*, Retrieved from https://www.techpolicy.press/politicians-move-to-limit-predictive-policing-after-years-of-controversial-failures/

[31] While predictive systems can improve resource planning and operational precision, they also present trade-offs among accuracy, fairness, and transparency that require policy oversight. *See* Berk, R.A. (2021). Artificial intelligence, predictive policing and risk assessment for law enforcement. *Annual Review of Criminology*, *4,* 209–237, https://doi.org/10.1146/annurev-criminol-051520-012342; Sabol, W.J., & Baumann, M.L. (2022). Forecasting and criminal justice policy and practice. *American Journal of Criminal Justice, 47*(6), 1140–1165. https://doi.org/10.1007/s12103-022-09715-3

likelihood of violent, extremist, or safety-related harm to inform preventive or protective actions.[32] The taxonomy groups security threat group identification, radicalization risk assessment, and officer safety alert systems into a single functional family because each focuses on anticipatory threat detection and service delivery rather than adjudication, often operating upstream of formal legal processes.

These tools are being used across policing and corrections to support intelligence, classification, and operational safety decisions. **Security threat group identification** systems are used primarily in correctional and law enforcement contexts to classify individuals as gang- or group-affiliated based on association data, behavioral indicators, institutional records, and, in some cases, communications analysis. **Radicalization risk** tools attempt to identify indicators of extremist or violent ideological mobilization, frequently drawing on behavioral signals and communications data and, in some implementations, automated text or social media analysis. **Officer safety alert systems** identify people or situations posing potential threats to law enforcement personnel, using historical incident data, prior contacts, and threatening communications to flag potential high-risk encounters and improve situational preparedness.

Current implementations include gang validation databases such as CalGang Criminal Intelligence System; [33] rule-based or hybrid classification systems used in correctional facilities, like PATTERN;[34] and emerging radicalization detection tools that apply machine learning or

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[32] Fernandez, M., & Alani, H. (2021). Artificial intelligence and online extremism: Challenges and opportunities. *Predictive policing and artificial intelligence*, 132-162. https://doi.org/10.4324/9780429265365-7. Clesle, A., Knäble, J., & Rettenberger, M. (2024). Risk and threat assessment instruments for violent extremism: A systematic review. *Journal of Threat Assessment and Management*. https://psycnet.apa.org/fulltext/2025-02168-001.html

[33] Gang validation systems increasingly serve as predictive identity databases but raise significant due-process and equity concerns. In California, a state audit found that the *CalGang Criminal Intelligence System* lacked statutory oversight, contained questionable and outdated records, and allowed unjustified entries that may violate individuals' privacy rights. In New York City, the inspector general for the NYPD reported that the department's *Criminal Group Database* relied on inconsistent inclusion standards, failed to notify individuals designated as group members, and disproportionately affected youth of color. *See* California State Auditor (2016, August 11). *The CalGang Criminal Intelligence System* [Report 2015-130] https://information.auditor.ca.gov/pdfs/reports/2015-130.pdf; Strauber, J & Barrett, J. (2023, April). *An investigation into NYPD's Criminal Group Database*. New York City Department of Investigation, Office of the Inspector General for the NYPD (OIG-NYPD). https://www.nyc.gov/assets/doi/reports/pdf/2023/16CGDRpt.Release04.18.2023.pdf.

[34] The Federal Bureau of Prisons' PATTERN (*Prisoner Assessment Tool Targeting Estimated Risk and Needs*), mandated under the First Step Act of 2018 (Pub. L. 115–391), evaluates federal inmates' recidivism risk and identifies programming needs designed to support rehabilitation and sentence-reduction eligibility. State and local correctional agencies employ comparable tools, such as COMPAS (*Correctional Offender Management Profiling for Alternative Sanctions*), which has been used by, for example, the California Department of Corrections and Rehabilitation to classify offenders for placement, supervision, and case-management decisions. While both systems seek to standardize risk assessment and guide individualized interventions, PATTERN is specifically focused on federal prisoners' progress toward reduced recidivism through evidence-based programming. *See* Federal Bureau of Prisons. (n.d.). *PATTERN: Prisoner Assessment Tool Targeting Estimated Risk and Needs.* U.S. Department of Justice. https://www.bop.gov/inmates/fsa/pattern.jsp#:~:text=In%20developing%20the%20new%20risk,version%201.3%20is%20being%20used; California Department of Corrections and Rehabilitation. (2021, October). *Division of*

NLP techniques to communications and online activity.[35] Officer safety alert systems are being embedded in records management or dispatch platforms to alert officers of individuals flagged as presenting elevated risk.[36] Advanced deep-learning models can identify and classify tattoos per FBI National Crime Information Center (NCIC) standards and turn them into searchable digital evidence.[37] While these tools offer many benefits, threat assessment applications pose a high structural equity risk because they rely on predictive judgments about future harmful behavior, often using historical, behavioral, or proxy data that may reflect existing social and institutional biases. These tools are frequently deployed preemptively and can trigger surveillance, intervention, or restriction before any wrongdoing occurs, increasing the likelihood of disparate impacts on marginalized or over-policed populations. Threat assessment outputs—the predictions and risk scores generated by these tools—are typically opaque to the people being assessed. Affected persons may lack clear notice that an assessment has occurred, explanation of how the assessment was conducted or what factors influenced the results, and formal appeal mechanisms to challenge the output, thereby limiting accountability and creating barriers to recourse if desired. Errors or bias at this stage can cascade into downstream justice decisions, compounding inequities across multiple systems.

Most applications in this category are categorized in the taxonomy as high risk because of how they are used; specifically, when employed to predict someone's intent or threat level, the tools raise concerns about fairness, due process, and transparency. Risks are greatest when criteria are unclear, data come from sensitive sources, and people have little chance to understand, challenge, or remove a threat label. This rating does not mean threat assessment tools should not be used. Rather, it suggests that they require strong human-in-the-loop controls; explicit bias testing and monitoring; clear thresholds and escalation rules; notice, explanation, and appeal mechanisms; and regular equity audits.

1.4 Preventative and Empowerment Applications

At the preventative and empowerment level (1.4), predictive and analytic tools are oriented toward supporting positive outcomes by identifying needs, risks, and opportunities for intervention rather than estimating the likelihood of sanctionable behavior. These tools are

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Rehabilitative Programs & Board of Parole Hearings presentation. https://www.cdcr.ca.gov/bph/wp-content/uploads/sites/161/2021/10/DRP-BPH-Presentation-October-2021.pdf.

[35] European Commission. (2018, November 28). *Tracking and preventing radicalisation using AI-SPY*. https://projects.research-and-innovation.ec.europa.eu/en/projects/success-stories/all/tracking-and-preventing-radicalisation-using-ai-spy

[36] Mark43 (2025, April 16). *First Responder Update* [Product webpage]. https://mark43.com/product-updates/mark43-first-responder-update/; Tyler Technologies (n.d.). *Public safety solutions* [Product website]. https://www.tylertech.com/solutions/courts-public-safety/public-safety.

[37] TECH5 (n.d.). *How AI deciphers gang tattoos and auto-codes them to FBI NCIC standards* [blog post]. https://www.tech5-us.ai/ai-for-gang-tattoo-recognition/#:~:text=AI%20Takes%20Tattoo%20Intelligence%20to,to%20disrupting%20organized%20crime%20networks.

defined as decision-support systems that use structured and behavioral data to anticipate support needs, match people to services, and forecast resource requirements to enable rehabilitation, diversion, and successful reentry. Rehabilitation and skills empowerment, early intervention and diversion support, and reentry planning and resource forecasting are grouped in the taxonomy into a single functional family because they apply similar analytic techniques to guide supportive, forward-looking interventions across the justice continuum.

These tools are being used or explored by courts, corrections, and community supervision agencies to inform program placement, service delivery, and transition planning. **Rehabilitation and skills empowerment tools** assess criminogenic needs, educational gaps, or treatment readiness to recommend programming such as cognitive behavioral therapy, substance use treatment, or vocational training. **Early intervention and diversion support** systems identify people who may benefit from alternatives to formal prosecution or deeper system involvement, using risk-need indicators and, in some cases, communications or educational data to support eligibility screening and referral decisions. **Reentry planning and resource forecasting** tools support release preparation and post-release continuity by predicting service demand, identifying likely barriers to reintegration, and aligning individuals with housing, employment, health, or supervision resources.

Contemporary implementations include risk- and needs-assessment and program-matching modules embedded in case-management systems such as the Correctional Assessment and Intervention System and the Ohio Risk Assessment System;[38] diversion screening and pretrial assistance tools used by courts and prosecutors, including the Public Safety Assessment (PSA) and the Risk and Needs Triage Tool (RANT);[39] and reentry planning platforms that integrate risk, needs, and service-availability data across agencies.[40] While these applications generally

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[38] The Correctional Assessment and Intervention System (CAIS), developed by the National Council on Crime and Delinquency, and the Ohio Risk Assessment System (ORAS) provide structured approaches for identifying criminogenic needs and tailoring interventions in correctional settings. *See* National Council on Crime and Delinquency. (2018). *Correctional assessment and intervention system: System manual*. https://docs.evidentchange.org/Pages/caissystem/Content/Manuals/CAIS%20System%20Manual.pdf.; Latessa, E.J., Lemke, R., Makarios, M., Smith, P., Lowenkamp, C.T. (2010). The creation and validation of the Ohio Risk Assessment System (ORAS). *Federal Probation, 74*(1). https://www.uscourts.gov/sites/default/files/74_1_2_0.pdf.

[39] The Public Safety Assessment (PSA), the Risk and Needs Triage Tool (RANT), and guidance from the Center for Court Innovation all emphasize using risk data to expand diversion eligibility and minimize detention. *See* Center for Court Innovation. (n.d.). *Risk assessment & pretrial diversion: Frequently asked questions*. https://www.innovatingjustice.org/wp-content/uploads/2018/06/risk_assessment_diversion_faqs.pdf; Advancing Pretrial Policy & Research (n.d.). *About the Public Safety Assessment*. https://www.advancingpretrial.org/about-the-psa/; Serin, R.C. & Lowenkamp, C.T. (2015). Selecting and using risk and need assessments. *Drug Court Practitioner, X*(1), 1-22. https://ntcrc.org/wp-content/uploads/2022/01/Selecting_and_Using_Risk_and_Need_Assessments.pdf.

[40] Reentry integration frameworks, such as the Integrated Reentry and Employment Strategies model developed by the Council of State Governments Justice Center, and state-level integrated reentry approaches (e.g., Washington State's coordinated reentry services), demonstrate how cross-agency data systems can link supervision, health, housing, and labor services to support continuity of care. *See* Duran, L., Plotkin, M., Potter, P., & Rosen, H. (2013). *Integrated reentry and employment strategies: Reducing recidivism and promoting job readiness.* The

present lower normative risk than punitive predictive tools, they still warrant careful governance as opaque eligibility criteria, coerced participation, or data-driven exclusion from services can reproduce inequities if not designed and overseen with transparency, voluntariness, and accountability.

The risk assessment and prediction category of the taxonomy demonstrates potential and very real consequences of risk-based AI in the criminal justice system. These tools promise efficiency, consistency, and better resource allocation, but they can concentrate risk where automation, opacity, and historical bias intersect—particularly in the absence of robust safeguards. A central challenge remaining for AI in the criminal justice context is governance fit, which requires aligning use, oversight, and safeguards with the level of risk posed. In some domains, this points toward refinement and accountability. In others, this points toward restraint. Across all domains, it underscores that prediction is never neutral and that how, where, and why AI is used matters as much as what it can technically do.

2. Surveillance, Monitoring and Identification

Surveillance, monitoring, and identification technologies constitute one of the most visible and historically contested classes of AI applications in the criminal justice system. These systems encompass biometric identification, real-time and retrospective monitoring, and technology-assisted observation across physical and digital environments and are unified by the automated detection, tracking, or identification of people, objects, or behaviors at scale. Deployed throughout the criminal justice system, these technologies often operate continuously and affect large populations, including individuals not suspected of wrongdoing. While there is the potential to extend institutional reach and persistence beyond human limits, their deployment often outpaces the development of standards for proportionality, accuracy, and accountability.[41]

2.1 Biometric Identification

At the biometric identification level (2.1), AI systems are used to identify or verify individuals based on biological or physiological characteristics captured through sensors or digital media.[42]

Council of State Governments Justice Center. https://bja.ojp.gov/sites/g/files/xyckuh186/files/Publications/CSG-Reentry-and-Employment.pdf; Rogers, M. *AI enabled community supervision for criminal justice services: Final report* [Award No. 2019-75-CX-K001]. Washington, DC: U.S. Department of Justice, office of Justice Programs, National Institution of Justice. https://www.ojp.gov/pdffiles1/nij/grants/308693.pdf.

[41] Levinson-Waldman, R., & Dyson, I. (2025). *The dangers of unregulated AI in policing. Expert brief.* Brennan Center for Justice. https://www.brennancenter.org/our-work/research-reports/dangers-unregulated-ai-policing; Smith, J., Camello, M., & Planty, M. (2025). *Landscape study of generative artificial intelligence in the criminal justice system.* Research Triangle Park, NC: RTI International. https://cjttec.org/files/68545d9108275.

[42] Biometric identification tools are classified as AI in this taxonomy because contemporary implementations rely primarily on machine-learning models to learn biometric representations and perform probabilistic matching, unlike older rule-based comparison methods. Biometric identification itself is not new, but the dominant technical approach is now largely machine-learning-based, which allows for greater accuracy in partial or "wild" images. Rule-based

These tools are defined as automated identification technologies that analyze biometric data—such as facial features, fingerprints, voice patterns, iris or retinal scans, gait, or DNA—to match people to known identities or records for investigative, custodial, or access control. The taxonomy groups facial recognition, fingerprint matching, voice recognition, iris or retinal scanning, gait analysis, and DNA matching into a single functional family because they all seek to establish identity through bodily or biometric signals, rather than behavioral prediction.

Biometric identification tools are being deployed across policing, courts, and corrections to support investigations, booking and intake, access control, and identity verification. **Facial recognition systems** are used to compare images from cameras or body-worn video against reference databases for suspect identification or investigative leads; **fingerprint matching** remains a core capability in booking, criminal history checks, and forensic identification. **Voice recognition** tools are applied in custodial phone systems and investigations to associate speakers with known individuals, while **iris or retinal scanning** is used in more controlled environments—such as correctional facilities—for secure identification. **Gait analysis** and **DNA matching** represent more specialized applications, with gait recognition used experimentally or in limited surveillance contexts and DNA algorithms supporting forensic matching and kinship analysis.

Contemporary implementations include facial recognition technology[43] such as commercial platforms like Clearview AI, which offers image-matching services to law enforcement to investigate crimes.[44] The FBI's Next Generation Identification (NGI) program, developed by the Criminal Justice Information Services (CJIS) Division, provides criminal justice agencies with a comprehensive electronic repository of biometric and criminal history information. The NGI, which is replacing the Automated Fingerprint Identification System (IAFIS), has multimodal capabilities encompassing fingerprints, palm prints, irises, and facial recognition.[45] Voice biometrics have been embedded in jail and prison communications systems to monitor inmate conversations in real time (e.g., Securus Technologies has piloted AI models trained on years of

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biometric systems still exist, but they are no longer the prevailing or most impactful implementations in operational settings. Performance gains in biometrics are driven by deep learning, not rules. NIST evaluations show that dramatic performance improvements over the last decade coincide with the adoption of deep learning, confirming that machine learning is now dominant in operational systems. *See* Grother, P., Ngan, M., & Hanaoka, K. (2018). *Face recognition vendor test (FRVT), part 2: Identification* (NISTIR 8238). National Institute of Standards and Technology. https://doi.org/10.6028/NIST.IR.8238

[43] National Academies of Sciences, Engineering, and Medicine. 2024. *Facial Recognition Technology: Current Capabilities, Future Prospects, and Governance*. Washington, DC: The National Academies Press. https://www.nationalacademies.org/publications/27397

[44] ClearviewAI. *Clearview AI for Investigations* [Product webpage]. https://www.clearview.ai

[45] Federal Bureau of Investigation, Criminal Justice Information Services (CJIS) Division. (2024). *Next Generation (NGI) Identification.* U.S. Department of Justice. https://le.fbi.gov/science-and-lab/biometrics-and-fingerprints/biometrics/next-generation-identification-ngi.

recorded prison calls to flag potential criminal activity).[46] In community supervision contexts, states such as Oklahoma have piloted AI-enabled biometric monitoring programs; the Absolute ID pilot, for instance, uses facial and fingerprint scans combined with location tracking to support parole and probation check-ins.[47] And in forensic science, STRmix and the FBI's Combined DNA Index System (CODIS) automate DNA-profile comparison and kinship analysis.[48] The taxonomy flags many of the technologies in this category as a medium risk to equity, largely given concerns about privacy, error rates, bias, and the irreversible consequences of misidentification.[49] This is of particular concern when biometric tools are used at scale, linked across databases, or deployed without clear legal thresholds, oversight, and opportunities for correction.[50]

2.2 Video and Image Surveillance

At the video and image surveillance level (2.2), AI systems analyze visual data streams to detect, classify, and interpret activity in public and custodial environments. These tools are defined as automated visual analytics technologies that process live or recorded video and images to identify objects, people, behaviors, or events to support monitoring, investigation, and enforcement. The taxonomy groups automated video analytics, body-worn camera analysis, behavior detection systems, crowd monitoring, and contraband detection into a single functional

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[46] In 2025, Securus Technologies confirmed that it had trained large language model (LLM) systems on years of recorded inmate calls and was piloting tools to flag conversations associated with suspected planning or coordination of crimes inside U.S. prisons and jails. Civil-rights advocates, including Worth Rises and the ACLU National Prison Project, warned that such automated surveillance raises serious consent, privacy, and due process concerns. *See* O'Donnell, J. (2025). An AI Model Trained on Prison Phone Calls Now Looks for Planned Crimes in Those Calls. *MIT Technology Review*. https://www.technologyreview.com/2025/12/01/1128591/an-ai-model-trained-on-prison-phone-calls-is-now-being-used-to-surveil-inmates/.

[47] Fife, A. (2025, September 15). "Oklahoma may begin using AI to monitor people on parole." *The Oklahoman.* https://www.oklahoman.com/story/news/2025/09/15/oklahoma-parole-ai-monitoring-global-accountability-absolute-id/86113972007/

[48] STRmix Labs (n.d.). *STRmix DNA Interpretation Software*. STRmix Labs Ltd. https://www.strmix.com; Federal Bureau of Investigation, Laboratory Division. (2024). *Combined DNA Index System (CODIS) Overview*. U.S. Department of Justice. https://le.fbi.gov/science-and-lab/biometrics-and-fingerprints/codis-2.

[49] Evaluations by the National Institute of Standards and Technology (NIST) have documented significant racial and gender disparities in the performance of facial-recognition algorithms. These reliability gaps have had real-world consequences and have contributed to multiple wrongful arrests and convictions. These include at least seven confirmed cases of misidentification, six involving Black individuals who have been wrongfully accessed through erroneous facial recognition matches. *See* Grother, P., Ngan, M., & Hanaoka, K. (2019). *Face recognition vendor test (FRVT), Part 3: Demographic effects.* NIST Interagency or Internal Report [NISTIR 8280]. U.S. Department of Commerce, National Institute of Standards and Technology. https://doi.org/10.6028/NIST.IR.8280.; Sanford, A. (2024). *Artificial intelligence in putting innocent people at risk of being incarcerated*. Innocence Project. https://innocenceproject.org/news/artificial-intelligence-is-putting-innocent-people-at-risk-of-being-incarcerated/.

[50] Federal Trade Commission, Bureau of Consumer Protection (2023, May 18).. *FTC warns about misuses of biometric information and harm to consumers.* [Press Release]. U.S. Federal Trade Commission. https://www.ftc.gov/news-events/news/press-releases/2023/05/ftc-warns-about-misuses-biometric-information-harm-consumers.

family because these tools all rely on computer vision techniques applied to continuous visual surveillance, rather than identity verification alone.

Law enforcement and correctional agencies are using these technologies to extend human monitoring capacity across large volumes of visual data. **Automated video analytics** are deployed on fixed cameras or integrated surveillance networks to flag events such as loitering, perimeter breaches, or unusual motion patterns. **Body-worn camera analysis** tools are used post-hoc to search, categorize, and summarize footage for investigative, evidentiary, or training purposes.[51] **Behavior detection systems** attempt to infer intent or risk—such as aggression, fighting, or rule violations—based on movement, posture, or interaction patterns, while **crowd monitoring** tools estimate density, flow, or anomalies in public spaces. **Contraband detection** systems apply image recognition to identify prohibited objects in facilities, vehicles, or screening environments.

Current implementations include computer-vision platforms integrated with city camera networks, such as the Tulsa Police Department's Real-Time Information Center;[52] analytics layers applied to body-worn camera repositories;[53] automated monitoring tools used in jails and prisons;[54] and image-based screening systems for weapons or contraband,[55] including the

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[51] In Heber City, Utah, police are testing an AI program that generates police reports from officers' body-worn cameras. The technology's limitations became apparent when one of the generated reports claimed an officer shape-shifted into a frog—the result of the AI picking up audio from a TV playing *The Princess and the Frog* in the background. *See* Constantino, M. (2026, January 25). "Ribbit ribbit! Artificial Intelligence programs used by Heber City police claim officer turned into a frog," *Fox 13 Salt Lake City*. https://www.fox13now.com/news/local-news/summit-county/how-utah-police-departments-are-using-ai-to-keep-streets-safer.

[52] Stockett, R. (2025, March 12). "Tulsa police seek business partnerships to enhance crime response with live camera feeds." *KTUL News*. https://ktul.com/news/local/tulsa-police-seek-business-partnerships-to-enhance-crime-response-with-live-camera-feeds-security-footage-information-center-real-time-oklahoma-owners-theives-police-department

[53] Farooq, U. (2024, February 2). "Police Departments Are Turning to AI to Sift Through Millions of Hours of Unreviewed Body-Cam Footage." *ProPublica*. https://www.propublica.org/article/police-body-cameras-video-ai-law-enforcement

[54] Onie, S., Li, X., Liang, M., Sowmya, A., & Larsen, M. E. (2021). The Use of Closed-Circuit Television and Video in Suicide Prevention: Narrative Review and Future Directions. *JMIR Mental Health*, *8*(5), e27663. https://doi.org/10.2196/27663.

[55] Gun-detection AI systems have been deployed on school campuses by companies like ZeroEyes and CurvePoint.ai. However, documented failures reveal accuracy concerns. For example, an Omnilert system in Nashville (January 2026) failed to detect a handgun during a school shooting, while the same system in Baltimore County (October 2025) falsely flagged a student holding a bag of Doritos as carrying a weapon, prompting armed police response. The ACLU has raised concerns that these systems create both false security and trauma from false positives, with vendor accuracy claims remaining unverified by independent analysts. *See* Mitchell, G. (2026, February 11). Trinity Catholic School deploys AI gun detection on 20-acre campus. *Southwest Times Record*. https://www.swtimes.com/story/news/2026/02/11/trinity-catholic-school-adopts-ai-gun-detection-system-in-fort-smith/88623815007/?gnt-cfr=1&gca-cat=p&gca-uir=true&gca-epti=z119511p002950c002950v119511d--95--b--95--&gca-ft=211&gca-ds=sophi; Quinlan, K. (2025, November 12). "New gun-detection system uses Wi-Fi to sense concealed weapons." *StateScoop*. https://statescoop.com/new-gun-detection-system-uses-wi-fi-to-sense-concealed-weapons/; Stewart, K. (2025, October 24). "Police swarmed student after AI system mistook bag of chips for gun,

Clearpass scanner by LINEV in Hall County Jail in Grand Island, Nebraska.[56] Many technologies in this category are flagged in the taxonomy as medium or high risk given concerns about pervasive surveillance, false positives, and behavioral inference from ambiguous visual cues. This is particularly the case when these tools operate continuously, are linked to enforcement actions, or are deployed in environments where people have limited ability to avoid surveillance.

2.3 Location and Movement Tracking

At the location and movement tracking level (2.3), AI systems analyze spatial and temporal data to monitor, verify, or infer individuals' movements and presence across physical environments. These tools are defined as automated analytics that use location-based data—such as GPS coordinates, geofencing boundaries, vehicle or device identifiers, and facility sensors—to track movement, confirm compliance with location-based conditions, or reconstruct travel patterns for supervision and operational purposes. The taxonomy groups automated license plate readers, electronic monitoring analytics, geofencing and location verification, and facility tracking systems into a single functional family because they focus on spatial control and movement oversight rather than identity determination or behavioral prediction alone.

These tools are typically deployed to support enforcement, monitoring, and compliance verification. **Automated license plate reader** systems capture and analyze vehicle location data to identify vehicles of interest, reconstruct travel histories, or support investigations. **Electronic monitoring analytics** process data from ankle monitors or similar devices to track compliance with supervision conditions and detect violations. **Geofencing and location verification** tools define permissible or restricted areas and automatically flag boundary crossings, and **facility tracking** systems use radio-frequency identification, biometric checkpoints, or sensor networks to monitor movement within jails, prisons, or secure facilities.

Contemporary implementations include license plate reader platforms operated by police departments and regional data-sharing consortia;[57] commercial electronic monitoring systems used by probation and pretrial services, such as smartphone-based supervision programs like Corisoft;[58] and geofence-based supervision tools and other internal tracking systems used in

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officials say." *KBTX/CNN Newsource*. https://www.kbtx.com/2025/10/24/police-swarmed-student-after-ai-system-mistook-bag-chips-gun-officials-say/

[56] White, S. (2023, July 27). "New AI body scanner combats contraband in Hall County Jail." *FOX NE KFXL*. https://foxnebraska.com/newsletter-daily/new-ai-body-scanner-combats-contraband-in-hall-county-jail.

[57] Grogan, B. (2025, October 15). From patrol cars to poles: How automated license plate readers became a crime-fighting star. *Police Chief Magazine.* International Association of Chiefs of Police. https://www.policechiefmagazine.org/patrol-cars-poles-alpr

[58] Webb, J. (2023, January 5). "Vanderburgh County corrections set to drop ABK as electronic home detention provider." *Evansville Courier & Press*. https://www.courierpress.com/story/news/local/2023/01/05/vanderburgh-co-to-replace-abk-tracking-as-provider-of-home-detention/69777305007/; Corrisoft. (n.d.). *Smartphone-based solutions for effective pretrial supervision* [Product webpage]. https://corrisoft.com/who-we-serve/pre-trial-services/.

correctional facilities, including technology from Centific.[59] Most technologies in this category are flagged in the taxonomy as medium risk due to the intensity and persistence of location surveillance, the potential for function creep and data sharing beyond original purposes, and the disproportionate impact of movement restrictions and monitoring errors on people under supervision.

2.4 Communications Analysis and Monitoring

At the communications analysis and monitoring level (2.4), AI systems are used to monitor, analyze, and interpret communications content and interaction patterns for security, compliance, and investigative purposes. These tools are defined as automated communications analysis technologies that process digital and telephonic communications data to detect prohibited activity, security risks, or policy violations and to support intelligence and enforcement functions. The taxonomy groups social media analysis, phone call analysis, email/message screening, and dark web monitoring into a single functional family because they rely on algorithmic interpretation of communicative behavior, rather than physical surveillance or biometric identification.

Law enforcement and correctional agencies are using these technologies to scale monitoring and investigative capacity across custodial and open environments. **Social media analysis** tools have been used by law enforcement agencies for targeted investigations of specific individuals or cases.[60] **Phone call analysis** systems are used primarily in custodial settings to process recorded calls using keyword detection, sentiment analysis, or pattern recognition, with the goal of flagging security risks or prohibited conduct. **Email and message screening** tools review digital correspondence, often within jail or prison messaging platforms, to detect policy violations, contraband coordination, or safety concerns. Furthermore, metadata analysis may be employed to focus on non-content signals such as timing, frequency, duration, and contact patterns to infer elevated risk or policy violations without directly analyzing message content. **Dark web monitoring** technologies scan forums, marketplaces, and anonymized networks to identify illicit activity, emerging threats, or connections relevant to ongoing investigations.

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[59] Schultz, P. (2025, April 14). *Keep correctional facilities safe with AI-driven computer vision* [Blog post]. Centific. https://centific.com/blog/keep-correctional-facilities-safe-with-ai-driven-computer-vision

[60] Social media analysis tools are classified as AI when they employ machine-learning models such as natural language processing, computer vision, or multimodal systems to infer meaning, sentiment, intent, or risk from large volumes of user-generated content. Unlike rule-based monitoring or keyword search, these systems rely on learned representations and probabilistic inference to analyze evolving language, context, and behavior at scale. Their outputs often inform prioritization, alerts, or downstream decisions, which further distinguishes them from traditional analytics.

Implementations include AI-enabled custodial phone monitoring systems and tools embedded in correctional email and messaging platforms,[61] as well as dark web analytics tools used by investigative and cybercrime teams.[62] Commercial social media monitoring products such as Babel Street and Dataminr exist and are being marketed to law enforcement.[63] But it's important to note that institutional hesitancy, policy restrictions, and ongoing questions about appropriateness of systematic social media monitoring have historically limited the adoption of these tools by law enforcement.[64] Most technologies in this area are categorized in the taxonomy as medium risk, reflecting concerns about privacy, surveillance overreach, and the difficulty of auditing or contesting algorithmic interpretations of speech. This is particularly the case where monitoring is continuous, criteria are opaque, and people have limited ability to opt out or seek redress.[65]

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[61] O'Donnell, J. (2025, December 1). "An AI model trained on prison phone calls now looks for planned crimes in those calls." *MIT Technology Review*. https://www.technologyreview.com/2025/12/01/1128591/an-ai-model-trained-on-prison-phone-calls-is-now-being-used-to-surveil-inmates/.

[62] Goodison, S. E., Woods, D., Barnum, Jeremy D, Kemerer, A. R., Jackson, B. A. (2019). *Identifying law enforcement needs for conducting criminal investigations involving evidence on the dark web* (RR-2704). Santa Monica, CA: RAND Corporation. https://doi.org/10.7249/RR2704

[63] Brennan Center for Justice. (2021, November 17). *Third-party vendors of social media monitoring tools for law enforcement agencies*. https://www.brennancenter.org/our-work/research-reports/third-party-vendors-social-media-monitoring-tools-law-enforcement

[64] Congressional Research Service research indicates that "data are lacking on the extent to which law enforcement agencies leverage public information on social media platforms," and notes that "some observers have suggested that agencies such as the Federal Bureau of Investigation (FBI) may be reluctant to regularly analyze public social media posts because that could be viewed as spying on the American public." Additionally, social media platforms have modified policies "to expressly prohibit their user data from being used by law enforcement to monitor social media." *See* Finklea, K. M. (2022). *Law enforcement and technology: Using social media* (R47008). Washington D.C.: Library of Congress, Congressional Research Service. https://crsreports.congress.gov/product/pdf/R/R47008. While historically there has been hesitancy with using social media monitoring for law enforcement, it is used in defense to monitor, analyze, and interpret vast amounts of public information for reconnaissance and decision-making. These technologies are used to detect disinformation, identify bot activity, and analyze sentiment, aiming to enhance information advantage. Marcellino, W., Schwille, M., Warren, K., Paul, C., López III, E., & Ryseff, J. (2024). *Acquiring publicly available information analytic tools in a proprietary marketplace acquisition recommendations for Army cyber command* (RRA-2500-1). Santa Monica, CA: RAND Corporation. https://doi.org/10.7249/RRA2500-1.

[65] The New York City Police Department conducted systematic surveillance of Muslim Americans, including monitoring social media activity, community associations, and online expression—without evidence of criminal wrongdoing. Individuals were placed under scrutiny based on religion and association rather than behavior. Affected individuals filed a federal civil-rights lawsuit (Hassan v. City of New York), arguing that the social media and online surveillance violated constitutional protections. Although the case faced procedural hurdles around standing, it remains one of the most prominent examples of people seeking redress after being wrongly targeted by social media surveillance. *See* Center for Constitutional Rights. (n.d.). "Hassan v. City of New York". Center for Constitutional Rights. https://ccrjustice.org/home/what-we-do/our-cases/hassan-v-city-new-york.

2.5 Sensor and Alert Systems

At the sensor and alert systems level (2.5), AI systems are used to process environmental and behavioral sensor data to automatically detect, classify, and generate alerts about potential safety, security, or operational issues. These tools are defined as automated detection and alerting technologies that analyze real-time or near-real-time sensor inputs to identify anomalous events, safety threats, or policy-relevant conditions, and to trigger notifications or responses. The taxonomy groups gunshot detection, acoustic analysis, and anomaly detection systems into a single functional family because all these tools rely on continuous sensor-driven pattern recognition, rather than direct observation or identity-based surveillance.

Law enforcement and correctional agencies typically deploy these technologies to improve situational awareness and reduce response times. **Gunshot detection** systems use acoustic sensors and machine-learning classification to identify and triangulate suspected firearm discharges in public spaces, generating alerts for dispatch and patrol units. **Acoustic analysis** tools are used in policing and custodial environments to classify sounds—such as shouting, alarms, breaking objects, or distress signals—to support safety monitoring and incident detection. **Anomaly detection** systems analyze streams of behavioral, structural, or sensor data to identify deviations from expected patterns, such as unusual movement, activity spikes, or system irregularities that may indicate emerging risks or operational issues.

Implementations of these tools include city-wide acoustic sensor networks for gunshot detection such as ShotSpotter,[66] sound-classification tools embedded in facilities or public infrastructure,[67] and anomaly-detection analytics layered onto sensor, behavioral, or operational data feeds.[68] This category was mostly tagged in the taxonomy as having medium risk, which reflect concerns about false positives, reliability in complex environments, and the potential for automated alerts to drive enforcement actions without sufficient validation or human oversight.[69]

The surveillance, monitoring, and identification core category highlights the tension between expanded visibility and civil liberty risk. While these AI tools can enhance situational awareness,

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[66] Goldenberg Sandau, A., Field, R., & Hunter, K. (2024). Detect, Dispatch, Drive: A Study of ShotSpotter Acoustic Technology and Transport of Gunshot Victims. *The Journal of surgical research*, *300*, 550–558. https://doi.org/10.1016/j.jss.2024.04.076.

[67] Nogueira, A. F. R., Oliveira, H. S., Machado, J. J. M., & Tavares, J. M. R. S. (2022). Sound Classification and Processing of Urban Environments: A Systematic Literature Review. *Sensors*, *22*(22), 8608. https://doi.org/10.3390/s22228608.

[68] Diro, A., Chilamkurti, N., Nguyen, V. D., & Heyne, W. (2021). A Comprehensive Study of Anomaly Detection Schemes in IoT Networks Using Machine Learning Algorithms. *Sensors (Basel, Switzerland)*, *21*(24), 8320. https://doi.org/10.3390/s21248320.

[69] The use of acoustic gunshot detection systems has produced documented unintended consequences, most notably in *Williams v. City of Chicago*, where reliance on a ShotSpotter alert contributed to a wrongful arrest and nearly a year of pretrial detention, ultimately prompting a federal civil rights lawsuit and policy changes restricting the technology's use. *Williams v. City of Chicago*, No. 22-cv-03114 (N.D. Ill. 2022). https://www.macarthurjustice.org/wp-content/uploads/2022/07/Complaint-file-stamped.pdf

investigative efficiency, and safety, they can also concentrate power in systems that are often opaque, error prone, and difficult to dispute once operationalized. The central challenge with these technologies is not whether surveillance technologies can work, but whether their use can be meaningfully constrained by purpose limitation, human oversight, accuracy thresholds, and democratic governance. In some contexts, this argues for tightly scoped and auditable deployment, and in others, it may demand outright limitation or prohibition. Across all contexts, persistent monitoring is not a neutral technical capability, but rather a structural intrusion into public life whose risks scale exponentially with its reach.

3. Analysis and Decision Support

AI technologies are increasingly being used in the criminal justice system to analyze large amounts of information and provide recommendations to human decision makers within investigative, legal, and administrative contexts. These technologies now extend into judicial operations. Newly issued professional guidelines for judges describe permissible uses for AI tools such as legal research, drafting routine orders, calendaring, and workflow analysis, while federal judges have simultaneously begun issuing orders outlining the permissibility of AI use in their courtrooms.[70] The appeal of these uses are obvious as they ostensibly enhance efficiency, consistency, and evidence-based decision-making. It has been well documented that criminal justice professionals operate under significant constraints, from resource limitations to overwhelming caseloads, crowded dockets, and understaffed facilities.[71] Evidence also indicates that these structural strains contribute to work-related stress among justice personnel.[72] AI systems hold great potential to alleviate these pressures and stressors by automating routine analysis, identifying patterns humans might miss, synthesizing information from various sources, and recommending actions grounded in empirical data rather than intuition or individual bias. In theory, these systems should improve decision quality, reduce arbitrary disparities, and free

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[70] In 2025, the ABA Task Force on Law and Artificial Intelligence's Working Group on AI and the Courts issued recommendation permitting the use of AI tools for legal research, drafting routine orders, calendaring, and workflow analysis. Federal judges have also begun issuing orders requiring attorneys and pro se litigants, for example, to disclose AI tool use, identify AI-generated portions of filings, and independently verify all legal citations and factual assertions for accuracy. *See* Dixon, H. B., Goddard, A. H., Grossman, M. R., Rodriguez, X., Schlegel, S. U., & Thumma, S. A. (2025). Navigating AI in the judiciary: New guidelines for judges and their chambers. *The Sedona Conference Journal*, 2(6), 1–19. https://www.thesedonaconference.org/sites/default/files/publications/NavigatingAIintheJudiciary_PDF_021925_2.pdf; Law360 Pulse. (n.d.). *Tracking Federal Judge Orders on Artificial Intelligence* [interactive database]. Retrieved from https://www.law360.com/pulse/ai-tracker

[71] Pace, N.M., Brink, M.N., Lee, C.G., & Hanlon, S.F. (2023). *National public defense workload study* (RR-A2559-1). Santa Monica, CA: RAND Corporation. https://www.rand.org/pubs/research_reports/RRA2559-1.html; Metcalfe, C., & Kuhns, J. B. (2023). Coping with limited prosecutorial resources: An assessment of the case processing and community impact from the perspective of prosecutors and staff in a southeastern county. *Criminal Justice Policy Review, 34*(4), 337-360. https://doi.org/10.1177/08874034231163070

[72] Baćak, V., Lageson, S.E., & Powell, K. (2024). The stress of injustice: Public defenders and the frontline of American inequality. *Social Forces.* https://doi.org/10.1093/sf/soae027

professionals to focus on more complex tasks. But their growing prevalence raises fundamental questions about transparency, accuracy, accountability, and the appropriate boundaries of algorithmic recommendations affecting liberty and justice.[73]

3.1 Investigative Analysis

At the investigative analysis level (3.1), AI systems analyze large volumes of structured and unstructured data to support investigative sense-making, pattern discovery, and lead development. These tools are defined as automated analytical technologies that synthesize data across cases, sources, and modalities to identify relationships, patterns, and potential investigative leads that would be difficult to detect manually. Crime pattern recognition, link analysis/network mapping, digital forensics and evidence analysis, investigative lead generation, and case and evidence analysis are grouped in the taxonomy into a single functional family because they support investigative reasoning and prioritization, rather than direct enforcement or adjudication.

These technologies are being deployed by criminal justice agencies to aid with complex investigations. **Crime pattern recognition** tools analyze historical crime data to identify recurring patterns, series, or modus operandi across time and geography. **Link analysis and network mapping** systems connect people, locations, communications, and events to reveal hidden relationships or organizational structures relevant to investigations. **Digital forensics and evidence** analysis tools process seized devices, digital media, and data artifacts to extract, classify, and correlate evidentiary material. Emerging forensic challenges also involve synthetic media or "deepfakes," which require specialized AI detection methods to authenticate visual or audio evidence and prevent the introduction of falsified material.[74] **Investigative lead**

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[73] These systems occupy a distinctive niche by providing recommendations rather than making final decisions, creating ambiguous accountability structures. When a prosecutor uses an AI charging recommendation or a judge receives a sentencing suggestion, who bears responsibility if the recommendation reflects bias or incorporates flawed evidence? The concern deepens given the structural conditions of deployment. Overworked professionals searching for efficiency gains may defer to algorithmic guidance rather than maintain rigorous independent judgment. Several attorneys, for example, have already been caught (and in some cases punished for) relying on AI systems that hallucinated entirely fabricated case law, submitting false legal citations in court briefs and filings (for examples see Sherer et al., 2025, pp. 358-360). Moreover, many such systems have been adopted without independent validation of accuracy, without monitoring for disparities, and without transparent disclosure of training data or algorithmic logic. This section examines how these systems function across investigative, legal, and administrative domains, what legitimate problems they purport to solve, and the equity, transparency, and accountability challenges they introduce.

[74] In January 2026, the California Attorney General issued a cease and desist letter to xAI, demanding the company halt the creation and distribution of deepfakes, nonconsensual intimate images, and child sexual abuse material (CSAM) allegedly generated using the Grok AI model. The letter cited potential violations of California Civil Code § 1708.86, Penal Code §§ 311 et seq. and 647(j)(4), and Business & Professions Code § 17200. The action illustrates the growing evidentiary and human rights risks associated with synthetic media and underscores the need for robust forensic verification and governance frameworks in AI-enhanced investigative systems. *See* California Department of Justice. (2026, 16 January). *Attorney General Bonta Sends Cease and Desist Letter to xAI, Demands It Halt Illegal Actions Immediately* [Press release]. https://oag.ca.gov/news/press-releases/attorney-general-bonta-sends-cease-and-desist-letter-xai-demands-it-halt-illegal

generation systems identify or rank potential suspects, locations, or next steps based on probabilistic or rule-based analysis. **Case and evidence analysis** systems apply these techniques to organize and synthesize investigative information, from pattern analysis and forensic findings, to identify overlooked connections, re-prioritize evidence, and support investigative decision-making across both active and inactive (or "cold") cases.

Common implementations include AI-assisted digital forensics software,[75] retrospective analytics applied to cold cases,[76] and cloud-based evidence management systems that use AI to organize and summarize digital case materials to aid in lead generation.[77] Risk considerations concern transparency, reliability, and bias as vendors of these systems rarely disclose how their models are trained, what data sources they used to train their models, or their error rates. Studies also note AI "sycophancy"[78]—a tendency to be agreeable and align with user preferences rather than provide objective analysis.[79] Such sycophancy, combined with limited resources, can lead to an over reliance on unverified outputs. This domain is classified in the taxonomy as moderate risk, given the opacity of analytical models, potential bias, and the danger of treating algorithmic summaries as evidentiary rather than exploratory.

3.2 Legal and Case Analysis

At the legal and case analysis level (3.2), AI systems are being used or explored to support legal research, case evaluation, and decision-making within courts and prosecutorial contexts. These tools are defined as automated legal analytics technologies that analyze legal texts, case records, and evidentiary materials to assist with research, comparison, and recommendation tasks across

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[75] Amick, T. (2025, August 5). "How AI is revolutionizing digital forensics." *Police Chief Magazine.* https://www.policechiefmagazine.org/ai-is-revolutionizing-digital-forensics-magnet/

[76] Contreras, R. (2026, January 24). "AI is reshaping police detective work, starting with cold cases." *Axios*. https://www.axios.com/2026/01/24/ai-police-evidence-cold-cases

[77] Cloud-based evidence management platforms such as Axon Justice exemplify this trend, integrating features like automated transcript summaries and key-moment detection to help legal teams process digital evidence more efficiently. One district attorney's office reported that the technology saved their office nearly $4 million and eliminated 88 full-time positions through automation. *See* Axon. (n.d.). *Justice* [Product webpage]. https://www.axon.com/industries/public-safety/justice

[78] Naddaf, M. (2025). AI chatbots are sycophants—and it's harming science. *Nature, 647*, 13-14. https://doi.org/10.1038/d41586-025-03390-0

[79] Georgetown Law Institute for Technology Law & Policy demonstrated that OpenAI's April 2025 updated GPT-4o exhibited sycophantic behavior by endorsing harmful statements and delusional thinking before a rollback four days later. Their brief warns that in high-stakes contexts such as law, medicine, and criminal justice, sycophantic AI may produce objectively incorrect outputs, encourage harmful actions, or validate flawed reasoning. Similar tendencies were demonstrated in a controlled study where researchers found that large language models complied up to 100% of the time when asked to generate persuasive messages recommending medication switches, even when the drugs were identical under different names. *See* Georgetown Law. (July 30, 2025). *Tech Brief: AI Sycophancy & OpenAI*. Institute for Technology Law & Policy. https://www.law.georgetown.edu/tech-institute/insights/tech-brief-ai-sycophancy-openai-2/; Chen, S., Gao, M., Sasse, K. Hartvigsen, T., Anthony, B., Fan, L., Aerts, H., Gallifant, J., & Bitterman, D.S. (2025). When helpfulness backfires: LLMs and the risk of false medical information due to sycophantic behavior. *npj Digital Medicine, 8*, 605. https://doi.org/10.1038/s41746-025-02008-z

the lifecycle of a case. E-discovery and document review, case law research and citation, case similarity matching, charging recommendations, and sentencing recommendations are grouped in the taxonomy into a single functional family because they inform legal judgment and case strategy, rather than execute judicial authority directly.

Courts, prosecutors, and legal support staff are increasingly experimenting with or using these technologies to manage information overload and improve consistency and efficiency. **E-discovery and document review** systems automate the identification, categorization, and prioritization of relevant documents and evidence in large case files. **Case law research and citation** tools analyze statutes and prior decisions to surface relevant precedent and supporting authorities. **Case similarity matching** technologies compare current cases to historical cases based on factual, procedural, or legal features to inform strategy or expectations. **Charging recommendations** systems analyze case attributes to suggest potential charges, while sentencing recommendations tools assess offense characteristics and individual factors to propose sentencing ranges or options.

Contemporary implementations include AI-assisted legal research platforms such as Harvey AI, Lexis+ AI, Westlaw Precision, and Casetext CoCounsel,[80] many of which use GenAI to assist attorneys with drafting, research, and document review.[81] But given recent incidents of AI hallucinations and legal filings containing fabricated citations, courts and professional associations have cautioned attorneys to independently verify AI-generated work to ensure accuracy and compliance with ethical standards.[82] E-discovery platforms that integrate AI into research and case preparation functions, like Everlaw and Relativity, apply machine learning and GenAI to organize and extract patterns from large document sets in complex litigation.[83] Analytic platforms supporting prosecutorial and charging assessments, as well as algorithmic risk assessment or sentencing-support systems used in judicial and presentencing contexts,

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[80] The National Center for State Courts' AI Sandbox provides judges and court professionals a controlled environment to test AI applications, including tools such as Thomson Reuters CoCounsel Legal, for legal research. *See* National Center for State Courts (n.d.). *AI sandbox*. Retrieved from https://www.ncsc.org/resources-courts/ai-sandbox.

[81] GenAI tools enable faster analysis, drafting support, and information retrieval but also raise concerns about accuracy, bias, confidentiality, and professional ethics. *See* Case, N. (2024, May 7). The times they are a-changin': The rise of generative AI in the legal profession. *The Federal Lawyer* (FedBar Blog). https://www.fedbar.org/blog/the-times-they-are-a-changin-the-rise-of-generative-ai-in-the-legal-profession/.

[82] Diaz, J. (2025, July 10). A recent high-profile case of AI hallucination serves as a stark warning. NPR. https://www.npr.org/2025/07/10/ai-hallucination-lawyers-sanctioned; Johnson, K. (2025, September 22). "California issues historic fine over lawyer's ChatGPT fabrications." *CalMatters*. https://calmatters.org/economy/technology/2025/09/chatgpt-lawyer-fine-ai-regulation/

[83] AI-enabled e-discovery platforms harness generative and machine-learning capabilities to streamline the most time-consuming stages of litigation. These systems can classify, tag, and summarize thousands of documents, identify key facts, build timelines, and even draft preliminary communications. These efficiencies can substantially reduce manual review burdens while improving accuracy and analytical insight. *See* The Mississippi Bar (2025, July 1). *AI tools for lawyers – A practical guide*. Law Practice Management and Technology Committee. https://www.msbar.org/media/jgagwizj/ai-practical-guide-7125.pdf.

employ predictive models to identify patterns in past charging, bail, and sentencing decisions to inform human judgment, rather than replace it.[84] The risk to equity in this area is mixed. Some technologies directly influence decisions about a person's liberty and may perpetuate historical bias, thereby underscoring the need for strong transparency, explainability, and human oversight when algorithmic outputs inform legal judgment.[85]

3.3 Resource Allocation

At the resource allocation level (3.3), AI systems are used to support planning, prioritization, and optimization decisions related to the deployment of personnel, time, and institutional capacity. These tools are defined as automated decision support technologies that analyze demand, workload, geographic, and operational data to recommend how limited public safety and justice resources should be allocated across competing needs. Patrol deployment optimization, call prioritization, and case prioritization and assignment are grouped in the taxonomy into a single functional family because they shape operational decision making and service delivery, rather than directly determine legal outcomes.

In practice, these technologies are being piloted or deployed to improve efficiency and responsiveness. **Patrol deployment optimization** systems analyze crime patterns, calls for service, and geographic data to recommend patrol routes, staffing levels, or coverage strategies. **Call prioritization** tools classify incoming calls or incidents based on assessed urgency or risk to support triage and dispatch decisions. **Case prioritization and assignment** systems rank cases or workloads to guide assignment to officers, investigators, or supervision staff.

Current implementations include AI-assisted dispatch and triage software used by major emergency communication centers,[86] testing of AI-based call-sorting tools for non-emergency

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[84] Predictive algorithms and risk-assessment tools are being used to inform prosecutorial and sentencing decisions. These tools, including applications such as the COMPAS discussed in *State v. Loomis*, apply machine-learning models to evaluate factors like flight risk, recidivism likelihood, and case outcomes, yet they raise due-process and equal-protection concerns where their underlying data, weighting, or proprietary design limit transparency and contestability. *See* Baker, J.E., Hobart, L.N., & Mittelsteadt, M. (2023). *An introduction to artificial intelligence for federal judges* (chs. 5 & 8, pp. 42–76). Washington D.C.: Federal Judicial Center. https://www.fjc.gov/sites/default/files/materials/47/An_Introduction_to_Artificial_Intelligence_for_Federal_Judges.pdf

[85] As debates over algorithmic bias in criminal justice have shown, claims of racial inequity in risk assessment tools underscore the importance of rigorous methodological evaluation and transparency when such tools bear on questions of liberty. *See* Flores, A.W., Bechtel, K., & Lowenkamp, C.T. (2016). False positives, false negatives, and false analyses: A rejoinder to 'Machine bias: There's software used across the country to predict future criminals. And it's biased against Blacks.' *Federal Probation, 80*(2), 38–46.

[86] AI-assisted call automation is being piloted in emergency communications centers to reduce call-processing times and ease dispatcher workload. The hope is that this technology will save hours per dispatcher each day while reserving human expertise for high-risk emergencies. *See* Moulton, M. (2025, December 1). "How AI call automation can ease the strain on 911 centers." *Police 1*. https://www.police1.com/911-dispatch/articles/how-ai-call-automation-can-ease-the-strain-on-911-centers.

reporting lines,[87] and automated workload balancing and case management piloted by probation and supervision agencies.[88] This area is classified in the taxonomy as moderate risk to equity, which reflects concerns that optimization objectives may inadvertently encode policy choices, amplify existing inequities in service provision or enforcement, and reduce transparency into how allocation decisions are made. Such concerns are especially acute when recommendations are treated as defaults rather than advisory inputs.[89]

These resource allocation tools differ from the predictive systems described at the population and geographic level (1.2). While both support decisions about where and how to deploy resources, they differ by scale and time horizon. Resource-allocation tools operate at a tactical level, optimizing day-to-day distribution of personnel or cases in response to immediate operational demand. Population- and geographically based forecasting systems, by contrast, operate at a strategic level by projecting future patterns of crime, caseloads, or population pressures to inform long-term planning and capacity management across the system.

3.4 Program and Intervention Matching

At the program and intervention matching level (3.4), AI systems are used to support decisions about assigning people to programs, services, supervision conditions, or institutional placements. These tools analyze individual characteristics, assessed needs, behavioral factors, and system constraints to recommend interventions intended to improve outcomes or manage institutional risk. Treatment program recommendations, diversion screening, service needs assessment, reentry planning support, and classification and housing are grouped in the taxonomy into a single functional family because they operationalize analytical assessments into individualized action and placement decisions.

These technologies have commonly been deployed or explored by criminal justice agencies to help with resource planning and allocation. **Treatment program recommendations** systems analyze clinical, behavioral, or risk-related data to suggest appropriate rehabilitative or therapeutic programs. **Diversion screening** tools evaluate eligibility for alternatives to traditional

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[87] Appel, E., & Moudy, S. (2025, November 18). "SREC to test new automated non-emergency system for Crime Check calls in Spokane." *KREM-TV*. https://www.krem.com/article/news/local/srec-new-automated-non-emergency-system-crime-check-spokane/293-69ac84ae-70c5-4d29-b78d-6ea4f86d1405

[88] Catalis, for example, has an Automating Accountability in Probation Operations platform that claims to integrate automated task scheduling, escalation workflows, and real-time dashboards to support officer oversight and balanced caseload management across probation agencies *See* Marin, E. (2025, July 23). *Automating accountability in probation operations* [Product webpage]. Catalis. https://catalisgov.com/automating-accountability-in-probation-operations/

[89] Research on automated speech recognition, a technology increasingly integrated into AI-assisted 911 triage and call-classification systems, has shown that these models can exhibit unequal error rates across dialects, accents, and demographic groups, raising concerns about potential disparities when such systems are deployed in public safety contexts. *See* Mengesha, Z., Heldreth, C., Lahav, M., Sublewski, J., & Tuennerman, E. (2021). "I don't think these devices are very culturally sensitive."—Impact of automated speech recognition errors on African Americans. *Frontiers in Artificial Intelligence*, *4*, 725911. https://doi.org/10.3389/frai.2021.725911

prosecution or incarceration. **Service needs assessment** technologies assess factors such as housing, employment, education, and health to inform individualized case plans. **Reentry planning support** systems integrate assessed needs with available services to recommend transition plans, while **classification and housing** tools support decisions about security level, housing unit, or institutional placement within correctional facilities.

Implementation examples include risk and needs assessment and program matching platforms, diversion eligibility screening tools, reentry planning software used by corrections and supervision agencies, and classification systems embedded in correctional management platforms. For instance, the National Institute of Justice has supported the evaluation of AI-based reentry planning and supervision tools such as the Integrated Dynamic Risk Assessment for Community Supervision, developed in partnership with the Georgia Department of Community Supervision and the Georgia Crime Information Center to help officers identify risk, match programs, and manage caseloads in real time.[90] This area is categorized in the taxonomy as high risk given the significant influence these recommendations can have on access to services and conditions of release, as well as concerns about bias, transparency, and the tendency for algorithmic outputs to be treated as prescriptive rather than advisory without robust human oversight.

The analysis and decision support core category raises concerns about how AI might subtly recalibrate human judgment while remaining formally non-binding. The potential mechanisms include influencing what information is highlighted, how options are framed, and which outcomes appear most salient – shifts that could occur in ways that are difficult to observe and audit. A key concern in criminal justice is not that AI would replace human decision-makers outright, but that it could reshape decision-making norms in ways that may outpace governance, oversight, and institutional awareness.

4. Operations and Case Management

Operations and case management technologies form the administrative and organizational core of AI use in the criminal justice system. These tools are designed to manage records, coordinate workflows, support communication, and track compliance and performance across institutional processes. They are deployed across policing, courts, corrections, and community supervision to

[90] Findings from the Integrated Dynamic Risk Assessment for Community Supervision initiative show that while machine learning models can marginally improve predictive accuracy, the gains are not substantial enough to justify replacing transparent logistic-regression-based approaches. Instead, the most meaningful performance improvements arose from incorporating dynamic supervision data, such as drug testing results, violations, and employment status, that better reflect change over time. The evaluation also underscored the importance of bias testing, fairness auditing, and embedding uncertainty estimates in risk predictions to preserve human judgment and prevent overreliance on algorithmic outputs. *See* Lattimore, P. K., & Inkpen, C. (2024). AI R&D to support community supervision: Integrated dynamic risk assessment for community supervision (IDRACS) [final report] (Document No. 309339). U.S. Department of Justice, National Institute of Justice. RTI International. https://www.ojp.gov/pdffiles1/nij/grants/309339.pdf

handle high volumes of information and routine tasks in complex, resource-constrained environments. Although they are rarely framed as decision-making systems, operations and case management technologies shape how information flows, what actions are prioritized, and how institutional work is structured.

4.1 Case and Workflow Management

At the case and workflow management level (4.1), AI systems are used to support the coordination, progression, and administrative handling of cases across justice and public safety organizations. These tools are systems that automate or augment how cases are assigned, scheduled, routed, and tracked through institutional processes, without independently making legal or operational decisions. Caseload management systems, docket management, automated scheduling, workflow automation, and case tracking and status updates are grouped in the taxonomy because they structure daily operations.

These technologies are being explored or adopted across the criminal justice system to manage volume, reduce administrative burden, and improve process consistency. **Caseload management systems** support the assignment and monitoring of cases across personnel and organizational units. **Docket management** tools organize court calendars and procedural timelines. **Automated scheduling** systems generate and adjust schedules for hearings, appearances, supervision meetings, or internal workflows based on defined constraints. **Workflow automation** tools route tasks, documents, and approvals according to established rules and processes. **Case tracking and status updates** systems provide real-time visibility into case progression, including key milestones.

Contemporary implementations include integrated case management platforms used by courts and supervision agencies,[91] automated calendaring tools embedded in case management software,[92] and rule-based workflow engines that streamline routine processing.[93] This area is

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[91] The Los Angeles County Public Defender's Office, for example, has adopted an AI-enabled client case management platform that integrates machine-learning based document processing to automate data extraction, classify filings, and generate client-centric records. This is part of a modernization effort developed in partnership with Amazon Web Services to consolidate twenty-three legacy systems and improve supervision and defense workflows. *See* Quinlan, K. (2023, July 12). "L.A. County's public defender uses AI to improve client management." *StateScoop.* https://statescoop.com/la-county-public-defender-ai-aws/

[92] eCourtDate is a platform that integrates AI-supported notification, docket management, and reminder systems to reduce failures to appear, streamline rescheduling, and improve administrative efficiency for courts and supervision agencies nationwide. eCourtDate, according to their website, is in 9,338 locations across the U.S. *See* eCourtDate, Inc. (n.d.). *The AI-powered management platform for the justice system* [Product webpage]. https://ecourtdate.com

[93] In Texas, for example, Tyler Technologies' CSI software uses AI and robotic-process automation models to review and approve electronic filings. Initially piloted on a limited set of cases, the system automatically verifies whether each e-filing meets statutory submission standards before it is accepted, significantly cutting clerk processing times and backlogs. Once trained on local data, the model achieved accuracy exceeding that of manual review, enabling statewide expansion across additional case types. To manage downstream effects of increased throughput, the court adjusted operations so that the AI system runs only during business hours. *See* National Center

categorized in the taxonomy as low risk, reflecting its administrative and support role, But it is important to note that errors in scheduling, routing, or status tracking can create due process concerns and operational delays if not properly governed.[94]

4.2 Communication and Reporting

At the communication and reporting level (4.2), AI systems are used to support the creation, translation, delivery, and management of routine communications and formal reports within justice and public safety operations. These tools are systems that automate or augment how information is documented, transcribed, translated, and disseminated, without generating analytical judgments or operational decisions. Automated report generation, NLP for reports, transcription services, automated notifications and reminders, and interpretation/translation services are grouped in the taxonomy because they focus on information exchange.

These technologies are deployed by law enforcement, courts, corrections, and community supervision agencies to reduce administrative workload, improve consistency, and support timely communication. They have emerged in part to address documented and persistent pressures on frontline personnel, such as officers struggling to complete detailed incident reports quickly while balancing patrol responsibilities.[95] **Automated report generation** systems produce standardized reports based on structured inputs or templates. **NLP for reports** supports drafting, summarization, or refinement of narrative content in reports and case documentation. **Transcription services** convert audio or video recordings of interviews, hearings, calls, or other events into text for record-keeping and review. **Automated notifications and reminders** deliver time-sensitive messages related to court dates, supervision requirements, or procedural steps. **Interpretation/translation services** enable communication and reports to be produced or delivered in languages other than English.

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for State Courts. (2025, September). *AI Readiness for the State Courts* (pp.75-78). https://www.ncsc.org/sites/default/files/media/document/AI%20Readiness-for-the-State-Courts-2025.pdf.

[94] Something worth considering is understanding how automated scheduling works for each system. For example, there could be instances in which an automated scheduling management system included embedded biases that systematically scheduled low-income people for court appearances in the middle of the day, requiring them to take a full day off of work, while subtly reserving early and end-of-day appointments for high-income individuals. This could result in a higher risk of employment consequences for poor defendants, while allowing rich defendants to fit their "justice system contact" in with existing work schedules.

[95] Yu, H., & Monas, N. (2018). Recreating the Scene: An Investigation of Police Report Writing. *Journal of Technical Writing and Communication*, *50*(1), 35-55. https://doi.org/10.1177/0047281618812441.

Contemporary implementations include AI-assisted report writing tools,[96] drafting and summarization features,[97] automated transcription of body-cam footage,[98] notification systems for court and supervision events,[99] and multilingual communication platforms.[100] This area is categorized as low to medium risk. This reflects its primarily administrative and communicative role, while recognizing risks related to transcription errors, misinterpretation and mistranslation, or overreliance on automated language generation without human review.

4.3 Verification and Compliance

At the verification and compliance level (4.3), AI systems are used to support the monitoring, validation, and tracking of procedural and legal requirements within justice and public safety operations. These tools are systems that automate or augment checks for status, compliance, and fulfillment of conditions, without independently determining legal outcomes or imposing sanctions. Warrant checking automation, condition compliance monitoring, court appearance tracking, and payment and fee tracking are grouped in the taxonomy because they support oversight and administrative enforcement functions rather than predictive or analytical tasks.

Criminal justice agencies are often piloting or deploying these technologies to help meet legal obligations and procedural requirements. **Warrant-checking automation** systems verify the existence or status of warrants across relevant databases. **Condition compliance monitoring** tools track adherence to court-ordered or supervision-related conditions, including location- or schedule-based requirements. **Court appearance tracking** systems monitor attendance and participation in required court proceedings. **Payment and fee tracking** tools record and manage fines, fees, and other financial obligations associated with cases.

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[96] A growing number of police departments are now experimenting with AI-enabled report writing systems to ease administrative burdens. However, early pilots have revealed notable issues ranging from factual inaccuracies and data-handling concerns to questions about accountability and overreliance on automated text. *See* Lukens, P. (2025, March 1). "Automated report writing: Benefits and risks for police." *Police1*. https://www.police1.com/artificial-intelligence/automated-report-writing-benefits-and-risks-for-police.

[97] Bearister AI is a sophisticated legal assistant designed to assist criminal defense attorneys and public-interest cases. Its comprehensive suite of features includes document summarization and analysis, motion drafting, and evidence organization in accordance with pertinent statutes. *See* Berkeley Law. (n.d.). *Existing AI tools for criminal defense*. Berkeley, CA: University of California, Berkeley. https://www.law.berkeley.edu/research/criminal-law-and-justice-center/our-work/ai-for-public-defenders/existing-ai-tools/

[98] Di Feliciantonio, C. (2024, December 9). "California police use AI to transcribe body cam videos." *San Francisco Chronicle,* republished in *Government Technology*. Retrieved from https://www.govtech.com/artificial-intelligence/california-police-use-ai-to-transcribe-body-cam-videos; JusticeText. (n.d.). *Video evidence is a powerful vehicle for justice* [Product webpage]. Retrieved from https://justicetext.com

[99] eCourt Date. (n.d.). Use cases. https://ecourtdate.com/use-cases

[100] Axon Enterprise's webpage describes "Real-Time Translation," a body-worn camera feature that provides automated voice translation for officers in the field across 50 languages. There are several police departments that have reported using this new feature in their daily patrol work. *See* Axon Enterprise, Inc. (2024). *Real-time translation: Bridge language barriers with your BWC* [Product webpage]. https://www,axon.com; Yancey-Bragg, N. (2025, November 30). "Police and big tech have a plan to eliminate language barriers." *USA Today*. Retrieved from https://www.usatoday.com/story/news/nation/2025/11/30/real-time-translation-police/86591309007/.

Implementation examples include automated warrant query tools used during encounters or processing,[101] biometric check-in systems piloted for parole and probation monitoring,[102] and a pilot legal financial obligation tracking tool that can compile fines, fees, and payment history.[103] This area is categorized in the taxonomy as low to medium risk. This reflects its administrative oversight role while acknowledging that inaccuracies or system failures in verification or compliance tracking can have significant consequences for individuals and require strong governance and human oversight.

4.4 Performance and Quality Management

At the performance and quality management level (4.4), AI systems are used to support the monitoring, evaluation, and balancing of organizational performance and workload within justice and public safety agencies. These tools are systems that aggregate operational data to provide visibility into performance, quality, and capacity, without making binding operational or personnel decisions. Performance dashboards, quality assurance systems, and workload balancing are grouped in the taxonomy because they focus on oversight, measurement, and resource alignment rather than case-level analysis or prediction.

Criminal justice agencies are typically using these technologies to track operational metrics and support management functions. **Performance dashboards** present aggregated indicators related to activity levels, timeliness, and outcomes. **Quality assurance systems** support review processes by identifying errors, inconsistencies, or deviations from established standards in records, reports, or workflows. **Workload balancing** tools assess distribution of cases, calls, or tasks and support adjustments to align capacity with demand.

Contemporary implementations include management dashboards embedded in enterprise systems such as RapidOS in Aurora, Colorado,[104] and workload management features used by

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[101] Automated warrant query tools are classified as AI when they incorporate machine learning-based identity resolution, probabilistic matching, or risk-based prioritization to interpret or act on warrant information during encounters or processing. While basic warrant lookups are deterministic, contemporary systems often infer match confidence, integrate multiple data sources, or generate alerts that influence discretionary decisions in real time. These inference-driven functions distinguish AI-enabled warrant query tools from traditional database queries and justify their treatment as AI within the taxonomy. These tools–such as Mobile Fortify, an app made by NEC–are increasingly used by U.S. Immigration and Customs Enforcement officers to scan fingerprints and faces on their phones to confirm citizenship of individuals they encounter. *See* Dou, E., Galocha, A., Schaul, K. (2026, January 29). "The powerful tools in ICE's arsenal to track suspects — and protesters" *The Washington Post*. https://www.washingtonpost.com/technology/interactive/2026/ice-surveillance-immigrants-protesters/

[102] Santiago, C. (2025, September 21). *Oklahoma could be first state to track parolees with AI.* KTUL News. https://ktul.com/news/local/oklahoma-could-be-first-state-to-track-parolees-with-ai-prison-parole-probation-artificial-intelligence-technology-smartphones-smartwatches-biometrics

[103] JusticeBench. (2025). *Fines & Fees Data Researcher [AI-powered agent for Legal Aid Services of Oklahoma]*. https://www.justicebench.org/project/fines-data

[104] RapidSOS recently launched AI-enabled management dashboards for Aurora, Colorado's emergency communications system. Its unified reporting tool enables emergency management administrators to aggregate incident data into analytics dashboards for resource allocation and operational decision-making. The system's data

supervisors to redistribute assignments, including CallTriage by Versaterm.[105] This area is categorized in the taxonomy as low to medium risk. This reflects its managerial and oversight role, while recognizing that poorly designed metrics or automated adjustments can influence staff behavior and resource distribution and therefore require transparency and human oversight.

The operations and case management core category demonstrates how ostensibly low-risk AI can exert systemic influence. By standardizing processes and mediating access to information, these tools establish the conditions under which analysis, discretion, and enforcement occur elsewhere in the system. The primary risks associated with automation are not so much explicit errors, but rather stem from its invisibility: once established, automation tends to be taken for granted, making it challenging to audit and resistant to scrutiny. The taxonomy underscores that governance gaps at this foundational level can propagate downstream effects and reinforce the idea that infrastructural AI warrants scrutiny.

5. Training, Treatment, and Services

The final core category, Training, Treatment, and Services covers AI systems used to support workforce development, individual treatment and rehabilitation, reentry support, and community engagement within justice and public safety systems. These technologies are tools that deliver, match, or support services and training, rather than perform surveillance, prediction, or enforcement functions. These systems are organized in the taxonomy based on the population they serve and the institutional function they support. They are framed around capacity building, service delivery, and engagement. They operate across institutional boundaries, from institutional settings to community-based programs, often interacting with individuals during periods of vulnerability or transition.

5.1 Personnel Training and Development

At the personnel training and development level (5.1), AI systems are used to support the training, skill development, and performance improvement of justice and public safety personnel. These tools deliver training content, simulate operational scenarios, adapt learning pathways, or provide structured feedback, without making operational or disciplinary decisions. VR and simulation training, deescalation training systems, use-of-force scenario training, implicit bias

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architecture is designed to maintain functionality during high-volume call surges and large-scale emergencies. *See* Fox-Sowell, S. (2024, May 22). "AI-enhanced 911 tools help Colorado city keep up with growing population." *StateScoop*. https://statescoop.com/ai-emergency-services-911-aurora-colorado-2024/

[105] CallTriage is an AI-driven call management tool developed by Versaterm that is being deployed by the Phoenix Police Department. It is used to handle non-emergency calls more efficiently by directing callers to appropriate resources and freeing 911 operators for urgent incidents. The system provides automated, multilingual responses and can detect when a call initially categorized as non-emergency requires escalation to 911. *See* O'Sullivan, S. (2025, April 30). "Phoenix Police Department to launch AI tool to manage nonemergency calls." *KTAR News 92.3 FM.* https://ktar.com/arizona-technology-news/ai-dispatcher-police/5697790/

training, adaptive learning systems, and performance feedback systems are grouped in the taxonomy because they are designed to build workforce capability rather than manage cases or enforce compliance.

Law enforcement, courts, corrections, and community supervision agencies are exploring or using these technologies to support initial training, continuing education, and skills reinforcement. **VR and simulation training** and **use-of-force scenario training** systems provide immersive environments for practicing tactical and procedural responses. **De-escalation training systems** support the development of communication and behavioral response skills. **Implicit bias training** tools deliver structured instruction and assessment focused on bias awareness and mitigation. **Adaptive learning systems** tailor training content based on individual progress and demonstrated proficiency. **Performance feedback systems** provide structured feedback linked to training outcomes or observed performance.

Common implementations include simulation-based training platforms, learning management systems, structured bias training modules, and feedback tools integrated into training and evaluation workflows.[106] This area is categorized as low to medium risk given its instructional and developmental role. This recognizes that training content, evaluation criteria, and feedback mechanisms can influence professional behavior and therefore require oversight, transparency, and regular review.[107]

5.2 Treatment and Rehabilitation

At the treatment and rehabilitation level (5.2), AI systems are used to support therapeutic, educational, and behavioral health services for justice-involved individuals. These tools deliver treatment content, support screening and triage, or assist with educational placement, without independently determining diagnoses, sanctions, or release decisions. Mental health screening and triage, mental health treatment platforms, substance abuse treatment tools, educational assessment and placement, and educational support delivery are grouped in the taxonomy because they provide rehabilitative services rather than enforce compliance or assess risk.

These technologies are largely being developed or deployed to support service delivery in custodial and community-based settings. **Mental health screening and triage** systems assist in identifying needs and routing people to appropriate services. **Mental health treatment platforms** deliver therapeutic interventions and support treatment planning across behavioral

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[106] Marler, T., Straus, S. G., Mizel, M. L., Hollywood, J. S., Harrison, B., Yeung, D., ... & Swain, C. (2020). Effective game-based training for police officer decision-making: Linking missions, skills, and virtual content. In *Interservice/Industry Training, Simulation, and Education Conference;* Stubbs, G. (2025). Addressing the potential for training scars: investigating the risk of using Extended Reality in police training. *Policing: A Journal of Policy and Practice, 19*, paaf019.

[107] Technologies in this section can produce unintended consequences, such as reinforcing existing biases, encouraging over-reliance on quantified performance metrics, conditioning behavior toward scripted compliance, enabling secondary use of training data for discipline, and creating a false sense of risk mitigation.

health domains. **Substance abuse treatment tools** support engagement and treatment planning for substance use disorders. **Educational assessment and placement** tools support learning evaluation and program assignment. **Educational support delivery** platforms facilitate personalized learning and progress tracking.

Current implementations include digital mental health treatment platforms such as Echo,[108] substance abuse screening and treatment tools,[109] education placement systems such as UnlockEd,[110] and interactive therapeutic applications used in facilities and community programs**.** This area is categorized in the taxonomy as medium risk. This reflects its direct interaction with individuals and its potential influence on treatment pathways and outcomes, and recognizes the importance of clinical oversight and informed consent.[111]

5.3 Reentry and Support Services

At the reentry and support services level (5.3), AI systems are used to support transition planning and access to services following incarceration or court involvement. These tools assist with identifying, matching, or navigating services and legal processes, without independently determining eligibility, entitlement, or legal outcomes. Employment matching and assistance, housing placement support, benefits enrollment assistance, family reunification tools, peer support matching, and record expungement and post-conviction relief are grouped in the taxonomy because they facilitate access to resources and services.

In practice, these technologies are being developed, piloted, or deployed by a mix of agencies and community-based organizations to support reentry planning and community reintegration. **Employment matching and assistance** tools support job search and placement activities.

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[108] Zohuri, B. (2025). Artificial Intelligence and Machine Learning Driving Cognitive Behavioral Therapy (CBT) Treatments. *J Clin Med Health Care*, *2*(1), 1-6; Maris, S. (2025). "Behind Bars, Beyond Limits: AI Therapy Brings New Hope to Inmates". *Eye On Annapolis*. Accessed January 22, 2026: https://www.eyeonannapolis.net/2025/06/behind-bars-beyond-limits-ai-therapy-brings-new-hope-to-inmates/

[109] Ajayi, R. (2025). AI-powered innovations for managing complex mental health conditions and addiction treatments. *International Research Journal of Modernization in Engineering Technology and Science*, 1-18; Sawyer-Morris, G., Wilde, J.A., Molfenter, T. et al. (2024). Use of digital health and digital therapeutics to treat SUD in criminal justice settings: A review. *Current Addiction Report, 11*, 149–162. https://doi.org/10.1007/s40429-023-00523-1

[110] Botti-Lodovico, Y. (2025). Solving mass incarceration with AI-powered education and data-driven reform. *Medium*, The Patrick J. McGovern Foundation. Retrieved from https://medium.com/patrick-j-mcgovern-foundation/solving-mass-incarceration-with-ai-powered-education-and-data-driven-reform-254ae85d3f10.

[111] *Raine v. OpenAI* (2025) is a wrongful-death and product-liability lawsuit in which the parents of a 16-year-old allege that an AI chatbot functioned as an unregulated mental-health confidant and contributed to their son's suicide by providing psychologically reinforcing and inappropriate responses during periods of acute distress. The case signals that courts may scrutinize AI systems used in mental-health capacities—especially those engaging vulnerable users—for duty of care, foreseeability of harm, and adequacy of safety guardrails, significantly increasing legal risk for deploying AI as a screening, counseling, or therapeutic substitute rather than as a strictly limited, supervised support tool. *Raine v. OpenAI, Inc.* (2025). Complaint [court filing]. https://www.documentcloud.org/documents/26078522-raine-vs-openai-complaint/

Housing placement support systems assist in identifying available housing options. **Benefits enrollment assistance** tools support application and documentation processes.[112] **Family reunification tools** facilitate communication and coordination with family members.[113] **Peer support matching** systems connect people with support networks. **Record expungement and post-conviction relief** tools assist with eligibility screening and procedural guidance.

Contemporary implementations include reentry support platforms such as Recidiviz,[114] service navigation tools such as Untapped Solutions,[115] peer matching systems such as Marigold Health,[116] and legal assistance tools embedded in community programs, including LegalEase's Expungement.ai.[117] This area is categorized in the taxonomy as low to medium risk, reflecting its supportive role while acknowledging that inaccuracies or barriers in service matching or legal guidance can affect access to opportunities and services.

5.4 Community Engagement

At the community engagement level (5.4), AI systems are used to support communication, information access, and feedback between justice institutions and the public. This section focuses on service-oriented tools that facilitate information exchange, service navigation, and feedback collection without conducting investigations or making enforcement decisions. Chatbots for public information, tip line analysis, community feedback analysis, victim services navigation,

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[112] Nava Labs. (2024). *Case Study Experimenting with AI-powered tools in public benefits*. https://www.navapbc.com/case-studies/ai-tools-public-benefits

[113] Mamula, K.B. (2022, October 24). "Virtual Reality Helps Kids With Parents Behind Bars." *Pittsburgh Post-Gazette*. https://www.post-gazette.com/news/social-services/2022/10/24/virtual-reality-pittsburgh-amachi-wrap-technologies/stories/202210180093.

[114] Recidiviz is a nonprofit organization that partners with criminal justice agencies to improve corrections operations and reentry outcomes through data integration, analytics, and AI-assisted decision support tools. Its platform includes digital assistants that combine structured administrative data, statistical analysis, and machine-learning models with rule-based workflows to help corrections leaders and staff allocate resources, monitor outcomes, and support successful community reentry. Recidiviz reports partnerships with corrections agencies in 19 U.S. states. See *Recidiviz*. (n.d.). *About Recidiviz*. Recidiviz. https://www.recidiviz.org/

[115] Untapped Solutions helps organizations track referrals, outcomes, and progress for justice-impacted individuals. Untapped Solutions. (n.d.). *About us* [Product website]. https://untappedsolutions.io/about-us-1

[116] Marigold Health leverages AI-driven, text-based chat and Natural Language Processing (NLP) to assess conversations within peer support groups, enabling certified peer coaches and clinicians to detect patient needs, anticipate potential crises, and deliver proactive, around-the-clock care for mental health and substance use disorder recovery. The platform facilitates anonymous connections among users and supplies clinical teams with actionable insights to enhance patient retention and decrease hospital admissions. *See* Marigold Health. (n.d.). *Marigold Health* [Product webpage]. https://marigoldhealth.com.

[117] Expungement.ai, created by the justice technology startup LegalEase, is an AI-driven platform that simplifies the process of sealing or expunging criminal records. The platform seeks to make legal relief more accessible and affordable by reducing the time and expenses typically involved with conventional legal services. *See* Observer Staff. (2025, August 26). "Second Chances Start with the Expungement.ai App." *The San Antonio Observer*. https://saobserver.com/second-chances-start-with-the-expungement-ai-app/

legal assistance, and family communication and visitation support are grouped in the taxonomy because they focus on engagement and access rather than operational control.

These technologies are becoming increasingly available to support public interaction and service delivery. **Chatbots for public information** provide automated responses to common questions. **Tip line analysis** supports review and triage of incoming information. **Community feedback analysis** aggregates and summarizes public input. **Victim services navigation** tools help people access support services. **Legal assistance** systems support information access and document preparation. **Family communication and visitation support** tools facilitate communication and scheduling between individuals and families.

Common implementations include public facing information chatbots such as Beagle+,[118] victim services platforms like Aimee Says Inc.,[119] and communication systems supporting visitation and family, including Ameelio Connect.[120] This area is categorized in the taxonomy as low to medium risk. This reflects its informational and engagement-focused role but acknowledges the need for transparency, accessibility, and safeguards against misinformation and exclusion.

The training, treatment, and services core category illustrates both the promise and complexity of using AI to support care and development within justice systems. While these tools can expand access, personalize support, and reduce resource constraints, they also raise concerns about appropriateness, consent, and the substitution of automation for human care. As even supportive applications can produce harm if poorly designed, inadequately governed, or misaligned with user needs, this category demonstrates that good intent does not eliminate risk, and that the impacts of AI are shaped as much by context and implementation as by function.

Summary

All in all, this taxonomy provides a structured way to understand how AI is being used and explored across the criminal justice system, not as a single class of tools but as a layered set of criminal justice functions that operate at different points of the criminal justice continuum. By

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[118] Beagle+ is an AI-powered legal information chatbot from the People's Law School in British Columbia. Powered by ChatGPT-4.1 and trained on content from the People's Law School and Dial-A-Law websites, it offers general legal information to help people understand their rights and options in British Columbia. *See* People's Law School. (n.d.). *Beagle chatbot*. People's Law School. https://www.peopleslawschool.ca/about/beagle/

[119] Aimee Says Inc. is an AI-based support platform that assists survivors of domestic and emotional abuse with pattern recognition, documentation, and trauma-informed guidance. *See* Aimee Says Inc. (n.d.). *AI support that understands abuse — and helps you prove it* [Product webpage]. Aimee Says Inc. https://aimeesays.com.

[120] Ameelio Connect is a digital communication and scheduling platform used by correctional agencies to support incarcerated individuals' visitation and family contact. The platform enables approved visitors to schedule in-person and video visits and facilitates secure communication between facilities and visitors. The Iowa Department of Corrections, for example, requires the use of Ameelio Connect for scheduling visitation at participating facilities. See Iowa Department of Corrections. (n.d.). *How do I use Ameelio?* https://doc.iowa.gov/inmate-family-services/how-do-i-use-ameelio

organizing technologies into function-based categories and subcategories, the taxonomy highlights that risk is not uniform and does not stem solely from technical sophistication. Instead, risk emerges from where an AI system sits in the justice process, how directly it shapes discretion or behavior, and the visibility of its effects. The taxonomy shifts the focus away from abstract debates about AI writ large and toward practical questions of fit, governance, and oversight, making clear that responsible use depends less on what AI can do than on how, where, and why it is deployed in the criminal justice system.

Chapter 3. Observations

The taxonomy identifies areas of criminal justice functions where AI applications have been used, piloted, studied, or made commercially available for potential use and, as reflected in our metatags, reveals how risk and automation levels can vary across criminal justice functions. This chapter discusses some of these observations, which are further supported by literature, research, and existing federal guidance.

Complex AI Applications Exist Where Stakes are Highest

The taxonomy shows that more sophisticated forms of AI, such as predictive machine/deep learning, reasoning, and GenAI technologies, concentrate in specific criminal justice functions. It suggests that such capabilities concentrate in high-stakes domains such as risk assessment and prediction, surveillance and biometric identification, investigative and legal decision support, and system-level planning.

Agencies often adopt these technologies because of their promised efficiency. Predictive and surveillance tools, for example, convert large and heterogeneous datasets into actionable signals. Decision-support systems are often framed as mechanisms for increasing consistency in domains traditionally governed by discretion and variability. Planning and optimization tools respond to chronic capacity constraints by optimizing limited resources across interconnected systems. In each case, the complexity of the tools is justified as necessary to manage volume, speed, or uncertainty, even at the expense of interpretability and accountability. As legal scholars note, AI is increasingly viewed as a transformative force capable of enhancing accuracy and efficiency in criminal proceedings while simultaneously raising new questions about bias, data privacy, and professional accountability.[121]

If opaque and autonomous systems concentrate in high-stakes functional domains, governance risks emerge where consequences for individuals are most severe. Errors or biases in upstream systems could propagate across agencies and decision points, shaping downstream outcomes in ways that are difficult to track, especially by end users who may not fully understand or control the originating model. As AI complexity increases, particularly when multiple systems interact across institutional boundaries, responsibility for adverse outcomes will likely become less clear and make meaningful oversight and redress more difficult.

Existing safeguards mitigate some of these risks, but they do not evenly exist across the criminal justice system. As noted earlier, federal judges have increasingly issued standing orders

[121] Alhajjar, E. (2025). AI in the legal system: A transformative force in criminal justice. *Federal Sentencing Reporter, 37*(3-4), 236-240. https://doi.org/10.1215/10539867-11834082

on AI use in their courtroom.[122] These orders vary in approach, with some requiring certification that AI was not used, others requiring disclosure and accuracy verification if AI was used, and some prohibiting AI use in briefs altogether. This variance reflects ongoing judicial deliberation about how to manage accuracy, accountability, and professional responsibility in an era of generative AI. Privacy laws, procurement rules, and professional standards offer additional, indirect forms of oversight. But these protections rarely exist system-wide and they often fail to capture the cumulative effects of AI across the full decision pipeline. Moreover, many complex systems remain proprietary and thereby limit transparency and independent evaluation. Tools that vendors characterize as "advisory" often escape formal scrutiny despite their substantial influence on outcomes. The taxonomy structure suggests that where AI capabilities concentrate functionally, governance safeguards may be weakest, and thus the need for governance ought to be calibrated to functional role and risk rather than individual technologies.

AI is Cautiously Applied to Contestable, Formalized, and High-Visibility Functions

Criminal justice functions that are legally contestable, procedurally formalized, or subject to close public and judicial scrutiny would logically be the areas that merit the most restrictive governance. Federal guidance classifies such applications as "high-impact," meaning AI systems whose outputs serve as a principal basis for decisions or actions with significant legal, material, or binding effects on civil rights, access to services, public safety, or critical infrastructure.[123] In these cases, the guidance makes clear that agencies must identify, evaluate, and manage the associated risks through formal AI impact assessments and sustained transparency and accountability measures.

Core judicial decision-making remains the clearest example of where there should be assurances of human control. Final determinations regarding guilt, sentencing authority, and the exercise of judicial discretion remain overwhelmingly under human control, even where algorithmic tools are introduced in advisory roles. Courts have consistently limited reliance on proprietary or non-explainable AI systems in adjudication, citing due process, the right to dispute evidence, and the need for transparent reasoning.[124] *State v. Loomis* (2016) exemplifies this approach. In this case, the Wisconsin Supreme Court upheld the use of the COMPAS risk-assessment tool at sentencing only as a non-determinative advisory input, warning that such

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[122] Law360 Pulse. (n.d.). *Tracking Federal Judge Orders on Artificial Intelligence* [interactive database]. Retrieved from https://www.law360.com/pulse/ai-tracker

[123] Wright, C., & Walsh, K. (2025, July). *Artificial intelligence: Generative AI use and management at federal agencies* (GAO-25-107653). Washington, D.C.: U.S. Government Accountability Office. https://www.gao.gov/assets/gao-25-107653.pdf

[124] Citron, D. K., & Pasquale, F. A. (2014). The scored society: Due process for automated predictions. *Washington Law Review*, *89*(1), 1–33. https://digitalcommons.law.uw.edu/cgi/viewcontent.cgi?article=4796&context=wlr

systems may not be used to decide incarceration severity or liberty outcomes and must be carefully explained on the record.[125] Likewise, federal guidance stresses that judges must continuously validate such tools and use them to inform, not replace, independent judicial judgment.[126] RAND research on pretrial risk assessment tools finds that judges do just this, typically treating algorithmic recommendations as advisory rather than binding.[127]

U.S. government frameworks, such as the AI Risk Management Framework[128] and the Blueprint for an AI Bill of Rights,[129] recommend heightened safeguards, human oversight, and impact assessments in contexts where AI decisions are disputable, affect rights, or are difficult to remediate. These initiatives, while developed under a prior administration, remain influential as normative references. Legal scholarship shows that constraints on legal AI deployment reflect deliberate institutional and regulatory choices, meaning that policy decisions—not technical capability—are determining which applications are permissible.[130] The degree to which these frameworks shape deployment decisions across the criminal justice system would benefit from systematic research.

Structural Equity Risks are Higher in Upstream and Midstream Applications

The taxonomy identifies AI applications combining three characteristics as structurally higher in equity risk: reliance on historically generated criminal justice data, use of predictive or inferential analytics, and direct or indirect influence on enforcement actions or liberty-affecting decisions. These conditions concentrate in upstream and midstream functions such as risk

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[125] *State v. Loomis*, 881 N.W.2d 749 (Wisconsin 2016), cert. denied, 137 S. Ct. 2290 (2017).

[126] Baker, J.E., Hobart, L.N., & Mittelsteadt, M. (2023), *An Introduction to Artificial Intelligence for Federal Judges,* Washington, D.C.: Federal Judicial Center. https://www.fjc.gov/sites/default/files/materials/47/An_Introduction_to_Artificial_Intelligence_for_Federal_Judges.pdf

[127] In most jurisdictions, judges retain full discretion and frequently depart from the tool's suggested release or detention decisions. A recent RAND study found substantial variation in how often judges follow these recommendations: 15 percent of judges follow the recommendations less than 40 percent of the time; 22 percent more than 70 percent of the time. They found that judges often deviated from a risk assessment recommendation because they penalize certain factors, such as criminal history and charge grade, more than the risk assessment. *See* Anwar, S., Engberg, J., Opper, I. M., & Dion, L. (2024). *What happens when judges follow the recommendations of pretrial detention risk assessment instruments more often?* (RR-A3299-1). Santa Monica, CA: RAND Corporation. https://www.rand.org/pubs/research_reports/RRA3299-1.html

[128] National Institute of Standards and Technology (NIST), *Artificial Intelligence Risk Management Framework (AI RMF 1.0)*, U.S. Department of Commerce, Gaithersburg, Md., 2023. As of January 25, 2026, https://www.nist.gov/itl/ai-risk-management-framework.

[129] The White House. (2022). *Blueprint for an AI Bill of Rights: Making Automated Systems Work for the American People* [Archived]. Executive Office of the President. As of January 25, 2026, https://bidenwhitehouse.archives.gov/ostp/ai-bill-of-rights/

[130] Simshaw, D. (2022). Access to AI justice: Avoiding an inequitable two-tiered system of legal services. *Yale Journal of Law & Technology, 24*(1), 151-225. https://yjolt.org/sites/default/files/simshaw_-_access_to_a.i._justice.pdf

assessment, predictive policing, and surveillance where algorithmic outputs shape who is stopped, monitored, detained, supervised, or sanctioned. This structural concentration creates the potential for equity risk, because systems trained on data reflecting longstanding disparities in policing, charging, and supervision tend to reproduce and amplify inequities even when protected characteristics are not explicitly included.[131]

Individual-level risk assessment tools exemplify this structural risk. Pretrial, recidivism, violence, and supervision-violation risk models translate past arrests, charges, and compliance histories into scores that can affect detention decisions, supervision intensity, and access to alternatives. The taxonomy classifies these as having high risk to equity because proprietary and opaque designs obscure how input factors such as age, criminal history, or socioeconomic variables allow errors or hidden biases to go undetected and influence liberty-affecting decisions.[132] Research on commercial risk assessment tools, such as COMPAS, has found that they achieve roughly the same accuracy and fairness as predictions made by individuals with little or no criminal-justice expertise, suggesting that complexity and opacity do not necessarily improve fairness or performance.[133]

Population-level predictive systems present structurally similar equity concerns through different mechanisms. Crime forecasting and hotspot identification allocate enforcement resources to specific locations based on historical crime data, reinforcing cycles of over policing in already marginalized communities.[134] Two related mechanisms deepen these inequities. First, embedding predictive analytics into routine surveillance can amplify earlier patterns of discretionary monitoring and extends enforcement to broader populations,[135] and second, these systems rely on discretionary judgments and ambiguous definitions of risk, increasing the likelihood of over-inclusion or disparate impact on particular groups.[136]

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[131] Yen, C. P., & Hung, T. W. (2021). Achieving equity with predictive policing algorithms: a social safety net perspective. *Science and Engineering Ethics*, *27*(3), 36. https://doi.org/10.1007/s11948-021-00312-x; Alikhademi, K., Drobina, E., Prioleau, D., Richardson, B., Purves, D., & Gilbert, J. E. (2022). A review of predictive policing from the perspective of fairness. *Artificial Intelligence and Law*, *30*(1), 1-17. https://par.nsf.gov/servlets/purl/10276841

[132] Rudin, C., Wang, C., & Coker, B. (2020). The Age of Secrecy and Unfairness in Recidivism Prediction. *Harvard Data Science Review, 2*(1). https://doi.org/10.1162/99608f92.6ed64b30

[133] Dressel, J., & Farid, H. (2018). The accuracy, fairness, and limits of predicting recidivism. *Science Advances, 4*(1). https://www.science.org/doi/10.1126/sciadv.aao5580

[134] Lum, K., & Isaac, W. (2016). To predict and serve? *Significance, 13*(5), 14-19. https://doi.org/10.1111/j.1740-9713.2016.00960.x

[135] Brayne, S. (2017). Big data surveillance: The case of policing. *American Sociological Review, 82*(5), 977-1008. https://doi.org/10.1177/0003122417725865; Ferguson, A. G. (2017). *The rise of big data policing: Surveillance, race, and the future of law enforcement.* New York, NY: New York University Press.

[136] Ferguson, A. G. (2017). *The rise of big data policing: Surveillance, race, and the future of law enforcement.* New York, NY: New York University Press; Richardson, R., Schultz, J. M., & Crawford, K. (2019). Dirty data, bad predictions: How civil rights violations impact police data, predictive policing systems, and justice. *New York University Law Review Online, 94*, 15–55. https://nyulawreview.org/online-features/dirty-data-bad-predictions-how-civil-rights-violations-impact-police-data-predictive-policing-systems-and-justice/

Even in legally constrained domains such as charging, sentencing, and institutional classification, the structural characteristics suggest that equity risk remains high despite human oversight. Studies of sentencing tools show that judges often deviate from algorithmic guidance in systematic ways, reflecting competing objectives or normative judgments. Consequently, these systems have produced limited gains in fairness or efficiency while potentially affecting liberty, safety, and long-term outcomes.[137] In contrast, the taxonomy shows lower structural equity risk in administrative, procedural, and informational applications, such as scheduling, records management, payments, and public information. With those functions, AI systems often rely more on rule-based automation than predictive inference.

Summary

The taxonomy helps reveal patterns that can suggest where governance challenges may be greatest. More sophisticated capabilities such as machine learning, deep learning, NLP, and GenAI appear to concentrate in high-stakes domains, including risk assessment, forecasting, and surveillance. Continuous deployment of opaque AI systems in these high-stakes contexts could normalize their lack of transparency, causing stakeholders to accept black-box designs as technical inevitabilities rather than deliberate choices. The taxonomy further shows that AI capabilities operate across multiple sectors and functions. This demonstrates an interdependence among decisions that sector- or technology-specific governance approaches may not capture. Structural equity risk appears to concentrate in upstream and midstream applications that rely on historically generated data and influence enforcement and detention decisions.

Whether AI deployment follows these patterns—as in, a) systems genuinely concentrate where the taxonomy suggests, b) opacity is widespread, and c) cross-sector interdependence creates cascading effects—remains an open empirical question. The taxonomy's value lies in identifying where governance challenges would likely arise if deployment followed functional logic, and thus where targeted safeguards, research, and deliberate governance choices are most needed. By clarifying which functional combinations carry highest risk and which governance approaches might be appropriate for different functions, the taxonomy provides a foundation for developing more calibrated approaches to AI governance across the criminal justice system.

[137] Stevenson, M. T., & Doleac, J. L. (2024). Algorithmic risk assessment in the hands of humans. *American Economic Journal: Economic Policy, 16*(4), 382-414. https://doi.org/10.1257/pol.20220620

Chapter 4. Conclusions and Recommendations

Government leaders are increasingly embedding AI within the American criminal justice system, and its advancement is shaping decisions in law enforcement, courts, corrections, and community supervision. While AI applications offer potential benefits in efficiency, consistency, and analytical insight, their use in contexts that directly affect liberty and individual rights raises concerns about fairness, transparency, accountability, and due process. The rapid pace of AI adoption has seemingly outstripped the development of shared governance frameworks, creating an urgent need for tools that clarify what AI systems exist, how they function, and where their risks are most pronounced. The creation of this taxonomy responds to that need by providing a structured foundation for better understanding AI in the criminal justice system.

We began this report by first recognizing the blurred boundary between traditional statistical tools and modern AI. As such, we employed a definition that captures both contemporary machine-learning systems and foundational risk assessment technologies that continue to shape criminal justice practice. This definition is operationalized through six core AI capabilities: natural language processing, prediction and classification, planning, computer vision, generative AI, and expert systems. Building on this definition, we mapped AI applications to criminal justice functions and supplemented each entry with metadata on sector, automation, data type, transparency, and equity risk. The main value of the taxonomy lies in making visible how risk emerges not from AI sophistication alone, but from where systems operate within the criminal justice system, how heavily their outputs are relied upon by practitioners, and how observable or contestable their errors can be. The taxonomy reveals patterns in which equity risk and opacity appear to concentrate in upstream and midstream functions—such as risk assessment, forecasting, and surveillance—where historical data, feedback loops, and downstream reliance can compound harm. An aim of this taxonomy is to provide an evidence-based framework for more precise oversight, targeted safeguards, and informed policy choices as AI continues to be adopted by criminal justice institutions.

In this final chapter, we present points to consider that highlight potential opportunity areas. We also offer recommendations to stakeholders on approaches to implement and deploy AI technologies in criminal justice and conclude with content worthy of further reflection.

Opportunity Areas and Strategic Questions

In developing this taxonomy, we identified several areas for further inquiry, and here we raise questions that merit further research and policy attention. We frame these as opportunity areas for investigation and governance development for AI in the criminal justice system.

Opportunity 1: Understanding and unlocking efficiency in underutilized low-risk applications. Our research for the taxonomy suggested that AI applications may be underutilized in administrative and training functions, where capabilities arguably carry comparatively lower risks. For example, courts and community supervision agencies spend substantial resources on mundane administrative tasks. AI-powered tools could assist with each of these time-consuming tasks by, for example, automating document processing, streamlining docket management, generating routine reports, and organizing records.

NLP tools could help with document classification, intake triage, metadata extraction, record linking, and form completion without influencing judicial outcomes or legal determinations.[138] For example, AI-assisted document sorting or error checking could reduce backlogs and clerical errors while leaving all substantive decisions untouched.[139] Related research also suggests future potential for machine learning-enhanced docket management and scheduling systems designed to improve administrative efficiency while incorporating fairness considerations, though such approaches remain largely at the research stage rather than in operational court use.[140]

Administrative modernization may also depend on improving how records are linked, maintained, and shared across criminal justice agencies, particularly where inconsistent data systems create back-office burdens and downstream coordination issues. In these contexts, AI-enabled tools could help support functions such as metadata extraction, document reconciliation, record matching, and controlled information sharing. Courts and public defender offices could also use AI-powered summarization tools to condense statutory changes or appellate decisions into briefing templates or checklists, paralleling uses for professional development that are now emerging in legal research platforms like CoCounsel.[141] Despite this, AI adoption for such functions appears limited to date.

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[138] American Bar Association. (2025). *How AI enhances legal document review.* Law Practice Division. https://www.americanbar.org/groups/law_practice/resources/law-technology-today/2025/how-ai-enhances-legal-document-review/

[139] Reveal. (2025). *From Document Dump to Decision-Making: What AI-Assisted Review Actually Enables.* Reveal. https://www.revealdata.com/blog/from-document-dump-to-decision-making-what-ai-assisted-review-actually-enables

[140] Syracuse University's College of Law and Department of Computer Science are conducting a National Science Foundation-funded research project examining fairness-centered court scheduling. The study explores whether machine-learning models combined with optimization techniques can improve equity and efficiency in pretrial appearance scheduling. *See* Syracuse University Today. (n.d.). *Law professor's research uses artificial intelligence to improve fairness of criminal court scheduling* [blog post]. Syracuse University. https://news.syr.edu/blog/2026/01/law-professors-research-uses-artificial-intelligence-to-improve-fairness-of-criminal-court-scheduling/

[141] Thomson Reuters. (2025, August 11). *The complete AI legal solution has arrived* [blog post]. https://legal.thomsonreuters.com/blog/the-complete-ai-legal-solution-has-arrived/

This raises questions about what most drives implementation of AI in the criminal justice system.[142] Research on AI adoption among public defenders, for example, documents concrete barriers including prohibitive costs, restrictive institutional policies, substantial confidentiality risks that prevent submission of sensitive client information to commercial systems, and concerns about tool quality and reliability.[143] However, there remains a need to further explore whether these factors, or some combination, actually explain underutilization of low-risk administrative applications in the criminal justice system more broadly. Further questions include: Where does governance ambiguity exist and what specific barriers prevent deployment of administrative applications? How many agencies have considered these applications and then rejected them, and why? Do decision-makers understand the difference between low-risk administrative uses and high-stakes decision systems? Are human decision-makers trained to understand how AI tools work and to critically evaluate outputs, or does this capability gap itself constrain adoption?

Understanding these dynamics is essential because if underutilization stems primarily from governance uncertainty rather than legitimate risk concerns, then clarifying permissible uses could unlock efficiency gains. But if barriers are rooted in resource constraints or competing institutional priorities, different solutions are needed. The research question matters because the governance response hinges on understanding the actual constraint.

Opportunity 2: Understanding performance and equity in high-risk deployed systems. Predictive policing, individual risk assessment, surveillance, and biometric applications are identified in the taxonomy as areas with the highest risk of producing inequitable outcomes. Predictive policing and individual risk assessment tools are often developed using data drawn from racially biased practices in criminal justice systems, embedding multiple "layers of bias" in their underlying data, modeling design, and group-based assumptions that make the resulting risk scores difficult to interpret accurately, explain transparently, or dispute meaningfully.[144] Research on algorithm-augmented sentencing illustrates this layering. These systems can reduce jail time for low-risk offenders, yet they produce context-dependent equity outcomes that narrow gender disparities while widening racial disparities, suggesting that bias operates through multiple, interconnected mechanisms.[145] Recent legal-semiotic analysis shows that these

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[142] Brunette, A. (2025, August 13). "Government Legal Department Report: Why are courts & government law agencies so slow to implement AI?" *Thomson Reuters*. https://www.thomsonreuters.com/en-us/posts/government/courts-slow-implement-ai/.

[143] Cheong, I., Liu, P., Stammbach, D., & Henderson, P. (2026). How can AI augment access to justice? Public defenders' perspectives on AI adoption. *arXiv*. https://doi.org/10.48550/arXiv.2510.22933

[144] Eckhouse, L., Lum, K., Conti-Cook, C., & Ciccolini, J. (2019). Layers of bias: A unified approach for understanding problems with risk assessment. *Criminal Justice and Behavior, 46*(2), 185–209. https://doi.org/10.1177/0093854818811379

[145] While these predictive tools may pose risks to individual liberty, research shows that algorithm-augmented sentencing can reduce jail time for low-risk offenders. However, judges respond differently depending on whether

algorithmic systems do more than just quantify risk, they actively construct legal meaning. Categories such as "high-risk defendant" become institutionalized and self-validating, making them hard to challenge once embedded in legal processes.[146] Surveillance and biometric technologies further demonstrate how technological capability, when paired with sensitive data, can intensify equity and civil liberties concerns if left insufficiently constrained.[147] The emergence of GenAI in investigations compounds these risks, as it can produce contextually plausible but incorrect outputs ("hallucinations"), rely on outdated training data, and develop new biases as institutional practices and community demographics change over time.[148]

These structural risks have been well documented in research, but we lack systematic empirical data on how these systems perform in practice and what harms they can and do produce in the context of criminal justice. Without this, governance cannot be evidence-based, and the research and policy communities lack foundational knowledge about what is and is not working. This raises multiple questions, such as: What error rates and bias patterns exist in deployed systems? How do system outputs vary across demographic groups, and do these variations reflect legitimate operational differences or problematic bias? When deployed systems produce documented harms, what mechanisms exist for detection, documentation, and correction? How often do agencies identify problems, and how often do they take corrective action when they do identify them?

The primary opportunity here lies in constructing accountability infrastructure. This could include developing audit frameworks, establishing transparency requirements, and creating mechanisms for challenge and redress. But that infrastructure cannot be well designed without an understanding of what the actual performance issues are and how frequently they occur.

Opportunity 3: Repurposing AI for Oversight and Accountability. A taxonomy's value lies not only in shedding light on what currently exists, but also in identifying possibilities that have not yet been well-documented or explored. In this case, our research for the taxonomy indicated an under-explored opportunity of repurposing AI capabilities to strengthen oversight and accountability, rather than expand decision-making systems. Other sectors are already using similar approaches, such as the financial services industry's use of fairness dashboards and the

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algorithmic recommendations challenge or confirm their prior beliefs, which can narrow gender gaps but widen racial disparities. *See* Ho, Y-J., Jabr, W., & Zhang, Y. (2023). Algorithm-augmented sentencing: The role of human discretion in shaping judicial fairness and public safety. *SSRN.* http://dx.doi.org/10.2139/ssrn.4533047.

[146] Shekhawat, V., & Khare, P. (2025). AI and legal labels: How algorithms shape criminal justice. *International Justice for the Semiotics of Law – Revue Internationale de Sémiotique Jurdique.* https://doi.org/10.1007/s11196-025-10405-6

[147] National Academies of Sciences, Engineering, and Medicine. (2024). *Facial recognition technology: Current capabilities, future prospects, and governance*. Washington, D.C.: The National Academies Press. https://www.nationalacademies.org/projects/DEPS-CSTB-21-04

[148] Smith, J., Camello, M., & Planty, M. (2025). *Landscape study of generative artificial intelligence in the criminal justice system* (pp. 10-12). Research Triangle Park, NC: RTI International. https://cjttec.org/files/68545d9108275.

healthcare sector's continuous evaluation of algorithmic outputs for demographic bias.[149] Federal research on algorithmic accountability highlights the need for standards and methods to identify, measure, and manage bias. Integrating technical performance monitoring with governance practices is important for ensuring fairness and reliability in complex decision systems.[150] Applying these methods in criminal justice could allow agencies to more easily identify when risk assessment tools' error rates differ among demographic groups or when predictive policing outputs become geographically concentrated.

NLP can be adapted to support oversight and consistency checks across the justice system. Courts, prosecutors, and supervision agencies produce large volumes of text that are rarely analyzed systematically, including opinions, charging documents, supervision reports, and policy guidance. NLP tools can review these materials to identify discrepancies, inequities, or deviations from policy and precedent. For example, recent work by the Computational Policy Lab (CPL), a team of researchers at Harvard, Stanford, and New York University, developed an automated redaction system that uses NLP to detect and remove race-related and demographically identifying information from police narratives before prosecutors make charging decisions.[151] The approach relies on language models trained to recognize both explicit racial terms and indirect demographic cues, producing "race-blind" case files that can reduce the potential for bias. After successful pilots in two jurisdictions, California has mandated adoption of race-blind charging policies by 2025, and CPL is partnering with software vendors to integrate the system into standard case-management platforms.

Computer vision can also be redirected from identification toward evidence integrity. Tools developed through initiatives like Microsoft's Video Authenticator,[152] the Adobe Content Authenticity Initiative,[153] and the Defense Advanced Research Projects Agency's former Media Forensics (MediFor) and Semantic Forensics (SemaFor) programs[154] show how AI can help to

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[149] Ueda, D., Kakinuma, T., Fujita, S., Kamagata, K., Fushimi, Y., Ito, R., Matsui, Y., Nozaki, T., Nakaura, T., Fujima, N., Tatsugami, F., Yanagawa, M., Hirata, K., Yamada, A., Tsuboyama, T., Kawamura, M., Fujioka, T., & Naganawa, S. (2024). Fairness of artificial intelligence in healthcare: Review and recommendations. *Japanese Journal of Radiology*, *42*(1), 3–15. https://doi.org/10.1007/s11604-023-01474-3

[150] Schwartz, R., Vassilev, A., Greene, K., Perine, L., Burt, A., & Hall, P. (2022, March). *Towards a standard for identifying and managing bias in artificial intelligence* (NIST Special Publication 1270). National Institute of Standards and Technology. https://doi.org/10.6028/NIST.SP.1270

[151] Stanford Impact Labs. (2023). *Evaluating and scaling race-blind charging: Mitigating bias in charging decisions with automated race redaction.* Stanford University. https://impact.stanford.edu/investment/evaluating-and-scaling-race-blind-charging

[152] Burt, T., & Horvitz, E. (2020, September 1). "New steps to combat disinformation" [Blog post]. *Microsoft On the Issues*. https://blogs.microsoft.com/on-the-issues/2020/09/01/disinformation-deepfakes-newsguard-video-authenticator/

[153] Content Authenticity Initiative (n.d.). Restoring trust and transparency in the age of AI. https://contentauthenticity.org

[154] MediFor, which concluded in 2021, aimed to develop algorithms to automatically assess the integrity of photos and videos and provide analysts with insight into how manipulated content was created. The program explored

detect deepfake artifacts or pixel-level alterations in digital evidence. Similarly, forensic analysis platforms such as Magnet AXIOM[155] and Amped Five[156] are commercial applications that can be used to automatically cross check metadata, time stamps, and frame sequences to detect tampering or anomalies in video evidence. Cloud-based evidence management systems are also beginning to incorporate hash verification and anomaly detection to support secure chains of custody. While more common in research and journalism, these applications could help criminal justice agencies verify the authenticity of digital evidence without expanding surveillance or identification capacity.

While there is more to explore about whether AI applications can genuinely help solve issues plaguing criminal justice, or whether they would introduce new problems, these possibilities raise important questions: How would outputs from governance-focused AI systems themselves be monitored and audited? How do outputs from one AI system affect subsequent decisions and data collection? What evidence exists for feedback loops amplifying biases or errors across decision points? Do agencies currently monitor whether outputs propagate invisibly through multiple decisions? Supporting this type of innovation would require policy frameworks that affirm that monitoring and auditing AI use are valued, and empirical evidence about whether such uses enhance accountability or create new governance challenges.

Opportunity 4: Deliberating which functions should remain human-centered by design. The taxonomy offers insight into which criminal justice functions warrant extreme caution regarding AI use, but fundamentally, these are political and ethical questions rather than technical ones. Judicial determinations, such as findings of guilt and sentencing, require normative judgment and moral reasoning that cannot be reliably reduced to algorithmic inputs. Prosecutorial discretion in charging and plea negotiation involves balancing evidentiary strength, credibility assessment, and justice considerations. Decisions involving liberty deprivation carry such profound risk that using AI systems trained on biased historical data would compound systemic injustices.

The importance of meaningful human oversight extends to legal accountability. Courts are increasingly confronting questions about whether decision-makers can avoid responsibility for harmful outcomes by claiming ignorance of how AI systems generate outputs. For example, in *Mata v. Avianca, Inc.* (2023), a federal court rejected an attorney's argument that their reliance

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identifying three types of inconsistencies in deepfakes, including digital (pixel-level), physical (violations of natural laws), and semantic (contradictions with other known information). SemaFor built on MediFor's foundation to further automate detection, attribution, and characterization of manipulated media for human review. *See* Sayler, K.M., & Harris, L.A. (2021, June 8). *Deep fakes and national security* (CRS in Focus IF11333). Congressional Research Service. https://www.congress.gov/crs_external_products/IF/PDF/IF11333/IF11333.4.pdf

[155] Magnet Forensics. (n.d.). *Magnet Axiom: Recover & analyze your evidence in one case* [Product webpage]. https://www.magnetforensics.com/products/magnet-axiom/

[156] Amped Software (n.d.) *Amped Five: Forensic Image and Video Enhancement* [Product webpage]. https://ampedsoftware.com/five

on ChatGPT excused the submission of fabricated legal authorities, emphasizing that users remain responsible for verifying AI-generated information.[157] Similarly, in *Johnson v. Dunn* (2025), a federal court rejected arguments that erroneous citations resulted from GenAI use and imposed severe sanctions, emphasizing that attorneys who sign pleadings are accountable for all assertions, regardless of whether AI tools produced the errors.[158] As legal scholars have noted, "periodic monitoring—human intervention—remains an essential method of mitigation despite technological advancements occurring at an inhuman speed."[159] This requires active review of training data, testing of system outputs, and ongoing monitoring before and after deployment—not merely nominal approval of algorithmic recommendations.

Broader guidance is needed about: Which criminal justice decisions fundamentally require human normative judgment? Should core judicial determinations and prosecutorial discretion remain explicitly protected from algorithmic recommendation as a matter of governance principle? Should irreversible liberty deprivations operate under regimes that explicitly limit algorithmic influence?

These boundaries have not been deliberately settled through streamlined governance frameworks. Instead, the status quo emerges from default decisions and institutional inertia—decisions made incrementally by individual actors and jurisdictions rather than through systematic deliberation about values and principles. An opportunity exists to conduct explicit deliberation about these boundaries, establishing governance regimes that signal commitment to restraint as part of responsible innovation. Such deliberation should include examination of what meaningful human oversight requires before AI applications are used to influence liberty-affecting decisions.

Opportunity 5: Understanding data foundations and investing in remediation. A fundamental driver of structural equity risk in criminal justice AI is data provenance, yet we lack systematic understanding of the data underlying these systems. This matters because AI systems are only as fair as their data inputs permit, and governance is not a substitute for data quality.

Emerging approaches offer promise for addressing this gap. Synthetic data methods, for instance, enable testing and evaluating bias in algorithms without deploying systems in real-world decision-making. A collaboration between the United Nations' International Organization for Migration and Microsoft Research generated a series of "Global Synthetic Datasets" on human trafficking by algorithmically reconstructing anonymized representations of case-file

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[157] *Mata v. Avianca, Inc.*, 678 F. Supp. 3d 443 (S.D.N.Y. 2023).

[158] *Johnson v. Dunn*, No. 2:21-cv-1701 (N.D. Ala. July 23, 2025).

[159] Downs, J. (2025, January 30). Strict liability in the age of AI: Why human oversight is crucial for FDCA compliance. *Criminal Justice Magazine*. American Bar Association. https://www.americanbar.org/groups/criminal_justice/resources/magazine/2025-winter/strict-liability-ai-why-human-oversight-crucial-fdca-compliance/

data.[160] These datasets preserved the statistical properties and relational patterns of the original records while removing any personally identifiable information, enabling the analysis of trafficking dynamics and the design of evidence-based interventions without disclosure of survivor identities. Similar approaches could allow criminal justice agencies to test algorithmic fairness, robustness, and disparate impact using synthetic populations, rather than real individuals.

Yet before such solutions can be effectively used, we need foundational knowledge about current conditions. What alternative data sources could reduce reliance on biased historical criminal justice data? Could agencies invest in prospective data collection from reformed practices? Could better data quality standards and documentation themselves become governance vehicles? Could synthetic data approaches protect privacy while enabling fairness testing? What specific data quality issues exist in systems currently deployed, and what would be required to address them?

Investment in data innovation and remediation is not merely a technical fix, but foundational to ensuring oversight and equity when AI systems are used in the criminal justice. AI systems cannot perform better than their data foundations allow, and governance frameworks cannot compensate for poor data quality. Answering the research questions posed above requires systematically investigating data provenance, quality standards, and governance practices across currently deployed systems; identifying which biased historical data could be replaced or supplemented with alternative sources; and evaluating how synthetic data methods could enable fairness testing without using real individuals.

Recommendations

The taxonomy provides an inventory of AI applications across criminal justice functions. Its purpose is not to prescribe whether specific technologies should be adopted, rejected, or reformed, but to establish a common framework for governance development. By organizing applications by function, the taxonomy aims to enable more robust conversations about governance strategies moving forward. Here are our recommendations to that end.

Recommendation 1: Develop justice-specific AI governance standards calibrated to functional risk. Policymakers should develop governance frameworks tailored to specific functional categories within the criminal justice system with different standards for transparency, validation, human oversight, and redress based on functional risk and deployment context.

[160] Ravn, L. (2025). Towards synthetic data justice for development: A case study of synthetic datasets on human trafficking. *Big Data & Society, 12*(1), 1-23. https://doi.org/10.1177/20539517251381670

Recommendation 2: Prioritize safeguards over expansion in high-risk functional areas. Policymakers should direct governance investment toward accountability infrastructure—audit frameworks, transparency requirements, and mechanisms for both challenge and redress—for high-stakes, opaque AI applications with potential for significant downstream effects. Regulators should establish presumptive prohibitions on high-stakes, opaque AI applications until agencies demonstrate effective audit frameworks, independent oversight mechanisms, and demonstrated fairness across demographic groups.

Recommendation 3: Clarify governance frameworks for low-risk administrative functions. Governance ambiguity may cause criminal justice agencies to underutilize administrative and training functions. Policymakers should provide explicit guidance distinguishing process-oriented, non-determinative applications from decision-making systems to enable criminal justice agencies to unlock efficiency gains without expanding high-stakes systems.

Recommendation 4: Establish infrastructure for ongoing performance monitoring and validation. Governance frameworks should mandate that criminal justice agencies establish dedicated oversight infrastructure—with statutory authority, adequate funding, and quarterly reporting requirements—to conduct sustained bias auditing, performance tracking, and corrective action protocols. Criminal justice agencies and oversight bodies should establish infrastructure that bridges technology, law, and ethics and operates continuously throughout a system's deployment.

Recommendation 5: Invest in AI literacy for criminal justice professionals. Criminal justice agencies should develop and implement professional training programs that explain how sector-specific AI systems operate, their documented limitations, and what tools and mechanisms their human partners have for questioning or challenging algorithmic recommendations.

Recommendation 6: Establish explicit governance protections for decisions that affect individual liberty. Policymakers should establish explicit governance protections prohibiting algorithmic determinations of guilt, sentencing, prosecutorial charging, and other liberty deprivations. Courts should be required to disclose in judicial findings when AI recommendations inform outcomes, and defense counsel should have access to information about all AI tools used in their clients' cases.

Conclusion

AI in criminal justice is neither inherently beneficial nor harmful. Its consequences depend on what functions systems perform, what data they use, where in the decision process they operate, what safeguards surround them, and who is accountable. This work moves beyond abstract

debates about AI and towards specific questions: What should this application do? What could go wrong? Who is accountable if something does go wrong? How will we know if it's working? Who is affected, and how can they participate in these tools' governance? These questions can be addressed through sustained research, deliberate policy development, and inclusive governance practices focused on those most affected. While this taxonomy does not answer these questions, it creates the space for rigorous deliberation about them.

Appendix A. AI Taxonomy for the Criminal Justice Context

The taxonomy introduced in this report below (Appendix A.1) provides a comprehensive, end-to-end map of AI applications across the criminal justice system, organized around the full lifecycle of justice activities—from prevention and enforcement to adjudication, supervision, and reentry. It is structured into five top-level domains: Risk Assessment & Prediction; Surveillance, Monitoring & Identification; Analysis & Decision Support; Operations & Case Management; and Training, Treatment & Services. Each domain is broken down into functional subdomains and specific, well-defined use cases. Every use case is consistently characterized using a standardized set of attributes, including sector, automation level, data types, equity risk, transparency, and underlying AI capabilities. This enables cross-cutting comparison and governance analysis. Together, this structure allows stakeholders to assess not only what AI systems do, but where they operate, how automated they are, what data they rely on, and the relative ethical and operational risks they introduce.

Taxonomy Legend

- Sector: P=Policing | Ct=Courts | Cr=Corrections | CS=Community Supervision
- Automation (Auto): FA=Fully Automated | HR=Human Review Required | DS=Decision Support Only
- Data Type (Data): Bio=Biometric | Beh=Behavioral | Geo=Geospatial | Com=Communications | Vid=Video | Str=Structured | Edu=Educational
- Structural Equity Risk (Equity): H=High | M=Medium | L=Low
- Transparency Level (Transp): E=Explainable | P=Partially Explainable | B=Black Box
- AI Capability (AI Cap): NLP = Natural Language Processing | P/C = Prediction/Classification | Plan = Planning | CV = Computer Vision | GenAI = Generative AI | ES=Expert Systems

Appendix A.1. AI Taxonomy for the Criminal Justice Context

1. RISK ASSESSMENT & PREDICTION							
1.1 Individual Risk Assessment							
ID	**Technology**	**Sector**	**Auto**	**Data**	**Equity**	**Transp**	**AI Cap**
1.1.1	Pretrial risk	Ct, CS	HR	Str, Beh	H	P	P/C
1.1.2	Recidivism prediction	Ct, Cr, CS	HR	Str, Beh	H	P/B	P/C
1.1.3	Violence risk assessment	P, Ct, Cr, CS	HR	Str, Beh	H	P	P/C

1.1.4	Institutional misconduct prediction	Cr	HR	Str, Beh	M	P	P/C
1.1.5	Supervision violation risk	CS	HR	Str, Beh	H	P	P/C
1.2 Population & Geographic Prediction							
ID	**Technology**	**Sector**	**Auto**	**Data**	**Equity**	**Transp**	**AI Cap**
1.2.1	Crime forecasting/ predictive policing	P	DS	Geo, Str	H	P/B	P/C
1.2.2	Hotspot identification	P	DS	Geo, Str	H	E/P	P/C
1.2.3	Population management forecasting	Cr	DS	Str	M	E	P/C, ES
1.2.4	Demand prediction (dockets, capacity)	Ct, Cr	DS	Str	L	E	P/C, ES
1.3 Threat Assessment							
ID	**Technology**	**Sector**	**Auto**	**Data**	**Equity**	**Transp**	**AI Cap**
1.3.1	Security threat group identification	P, Cr	HR	Str, Beh, Com	H	P	P/C, ES
1.3.2	Radicalization risk	P, Cr	HR	Beh, Com	H	B	P/C
1.3.3	Officer safety alert systems	P, Cr	DS	Str, Beh	M	E	ES
1.4 Preventative & Empowerment Applications							
ID	**Technology**	**Sector**	**Auto**	**Data**	**Equity**	**Transp**	**AI Cap**
1.4.1	Rehabilitation and skills empowerment	Cr, CS	HR	Str, Beh, Edu	H	B/E	P/C, ES, GenAI
1.4.2	Early intervention and diversion support	Ct, CS, P	HR	Str, Beh, Edu, Com	H	P/B	P/C, NLP, ES, GenAI
1.4.3	Reentry planning and resource forecasting	Cr, CS	DS	Str, Beh	M	E/P	Plan, ES, GenAI
2. SURVEILLANCE, MONITORING & IDENTIFICATION							
2.1 Biometric Identification							
ID	**Technology**	**Sector**	**Auto**	**Data**	**Equity**	**Transp**	**AI Cap**
2.1.1	Facial recognition	P, Ct, Cr, CS	FA/HR	Bio, Vid	H	B	CV
2.1.2	Fingerprint matching	P, Ct, Cr, CS	FA	Bio	M	P	CV, ES

2.1.3	Voice recognition	P, Ct, Cr, CS	FA/HR	Bio	M	B	NLP
2.1.4	Iris/retinal scanning	P, Cr, CS	FA	Bio	L	E	CV
2.1.5	Gait analysis	P, Cr	HR	Bio, Vid	M	B	P/C
2.1.6	DNA matching algorithms	P, Ct	HR	Bio	M	P	ES
2.2 Video & Image Surveillance							
ID	**Technology**	**Sector**	**Auto**	**Data**	**Equity**	**Transp**	**AI Cap**
2.2.1	Automated video analytics	P, Cr	FA/HR	Vid	M	P/B	CV
2.2.2	Body-worn camera analysis	P	HR	Vid, Com	M	P	CV
2.2.3	Behavior detection systems	P, Ct, Cr	FA/HR	Vid, Beh	H	B	P/C, CV
2.2.4	Crowd monitoring	P	FA/HR	Vid	H	B	CV
2.2.5	Contraband detection	Cr, CS	HR	Vid	M	P	P/C, CV
2.3 Location & Movement Tracking							
ID	**Technology**	**Sector**	**Auto**	**Data**	**Equity**	**Transp**	**AI Cap**
2.3.1	Automated license plate readers	P	FA	Geo, Vid	M	E	CV
2.3.2	Electronic monitoring analytics	CS, Cr	FA/HR	Geo, Beh	M	E	P/C, ES
2.3.3	Geofencing and location verification	CS	FA	Geo	M	E	Plan
2.3.4	Facility tracking systems	Cr	FA	Geo, Bio	L	E	Plan
2.4 Communications Analysis & Monitoring							
ID	**Technology**	**Sector**	**Auto**	**Data**	**Equity**	**Transp**	**AI Cap**
2.4.1	Social media analysis	P, CS	HR	Com, Beh	M/H	P/B	NLP, P/C
2.4.2	Phone call analysis	P, Cr	FA/HR	Com	M	P	NLP
2.4.3	Email/message screening	Cr	FA/HR	Com	M	P	NLP
2.4.4	Dark web monitoring	P	HR	Com	M	B	NLP
2.5 Sensor & Alert Systems							
ID	**Technology**	**Sector**	**Auto**	**Data**	**Equity**	**Transp**	**AI Cap**

2.5.1	Gunshot detection	P	FA	Geo	L/M	E	P/C
2.5.2	Acoustic analysis	P, Cr	FA	Beh	M	P	ES
2.5.3	Anomaly detection systems	P, Cr	FA/HR	Beh, Str	M	B	P/C, ES
3. ANALYSIS & DECISION SUPPORT							
3.1 Investigative Analysis							
ID	**Technology**	**Sector**	**Auto**	**Data**	**Equity**	**Transp**	**AI Cap**
3.1.1	Crime pattern recognition	P	DS	Str, Geo	M	P	P/C
3.1.2	Link analysis/network mapping	P, Cr	DS	Str, Com	M	E/P	ES
3.1.3	Digital forensics and evidence	P, Ct	HR	Str, Com, Vid	L	E/P	ES
3.1.4	Investigative lead generation	P	DS	Str	M	P	P/C, ES
3.1.5	Case and evidence analysis	P	DS	Str, Com	M	E/P	P/C, ES, NLP
3.2 Legal & Case Analysis							
ID	**Technology**	**Sector**	**Auto**	**Data**	**Equity**	**Transp**	**AI Cap**
3.2.1	E-discovery and document review	Ct, P	HR	Str, Com	L	E/P	ES, NLP, GenAI
3.2.2	Case law research and citation	Ct	DS	Str	L	E	NLP, ES, GenAI
3.2.3	Case similarity matching	Ct	DS	Str	M	P	P/C, GenAI
3.2.4	Charging recommendations	Ct, P	HR	Str	H	P	P/C, ES
3.2.5	Sentencing recommendations	Ct	HR	Str, Beh	H	P	P/C, ES
3.3 Resource Allocation							
ID	**Technology**	**Sector**	**Auto**	**Data**	**Equity**	**Transp**	**AI Cap**
3.3.1	Patrol deployment optimization	P	DS	Geo, Str	H	E/P	Plan
3.3.2	Call prioritization	P	FA/HR	Str, Beh	M	E	P/C, ES
3.3.3	Case prioritization and assignment	P, Ct, CS	DS	Str	M	E	P/C

3.4 Program & Intervention Matching							
ID	**Technology**	**Sector**	**Auto**	**Data**	**Equity**	**Transp**	**AI Cap**
3.4.1	Treatment program recommendations	Ct, Cr, CS	HR	Str, Beh	H	P	P/C, ES
3.4.2	Diversion screening	P, Ct	HR	Str, Beh	H	P	P/C
3.4.3	Service needs assessment	Ct, Cr, CS	HR	Str, Beh	M	P	P/C, ES, GenAI
3.4.4	Reentry planning support	Cr, CS	DS	Str	M	E	Plan, ES, GenAI
3.4.5	Classification and housing	Cr	HR	Str, Beh	H	P	P/C, ES
4. OPERATIONS & CASE MANAGEMENT							
4.1 Case & Workflow Management							
ID	**Technology**	**Sector**	**Auto**	**Data**	**Equity**	**Transp**	**AI Cap**
4.1.1	Caseload management systems	P, Ct, CS	DS	Str	L	E	ES, GenAI
4.1.2	Docket management	Ct	FA/DS	Str	L	E	Plan, ES, GenAI
4.1.3	Automated scheduling	Ct, Cr, CS	FA	Str	L	E	Plan, ES
4.1.4	Workflow automation	P, Ct, Cr, CS	FA	Str	L	E	ES, GenAI
4.1.5	Case tracking and status updates	P, Ct, CS	FA	Str	L	E	ES, GenAI
4.2 Communication & Reporting							
ID	**Technology**	**Sector**	**Auto**	**Data**	**Equity**	**Transp**	**AI Cap**
4.2.1	Automated report generation	P, Cr, CS	FA/HR	Str	M	E/P	NLP, ES, GenAI
4.2.2	NLP for reports	P, Ct, Cr, CS	HR	Com, Str	M	P	NLP, GenAI
4.2.3	Transcription services	P, Ct, Cr	FA	Com	L	E	ES, NLP, GenAI
4.2.4	Automated notifications/ reminders	Ct, CS	FA	Str	L	E	ES, NLP
4.2.5	Interpretation/translation services	P, Ct, Cr, CS	FA	Com	M	E/P	NLP, GenAI

4.3 Verification & Compliance							
ID	**Technology**	**Sector**	**Auto**	**Data**	**Equity**	**Transp**	**AI Cap**
4.3.1	Warrant checking automation	P, Ct	FA	Str	M	E	ES
4.3.2	Condition compliance monitoring	Ct, CS	FA/HR	Str, Geo	M	E	P/C, ES
4.3.3	Court appearance tracking	Ct, CS	FA	Str	L	E	ES
4.3.4	Payment/fee tracking	Ct, CS	FA	Str	L	E	ES
4.4 Performance & Quality Management							
ID	**Technology**	**Sector**	**Auto**	**Data**	**Equity**	**Transp**	**AI Cap**
4.4.1	Performance dashboards	P, Ct, Cr, CS	FA	Str	L	E	ES, GenAI
4.4.2	Quality assurance systems	P, Ct, Cr, CS	DS	Str	L	E	ES
4.4.3	Workload balancing	P, Ct, CS	DS	Str	M	E	Plan
5. TRAINING, TREATMENT & SERVICES							
5.1 Personnel Training & Development							
ID	**Technology**	**Sector**	**Auto**	**Data**	**Equity**	**Transp**	**AI Cap**
5.1.1	VR/ simulation training	P, Cr	DS	Beh, Vid	L	E	CV, GenAI
5.1.2	De-escalation training systems	P, Cr	DS	Beh, Vid	L	E/P	ES, GenAI
5.1.3	Use-of-force scenario training	P, Cr	DS	Beh, Vid	M	E/P	CV, GenAI
5.1.4	Implicit bias training	P, Ct, Cr, CS	DS	Beh	L	P	NLP, ES, GenAI
5.1.5	Adaptive learning systems	P, Ct, Cr, CS	DS	Beh, Str	L	P	P/C, ES, GenAI
5.1.6	Performance feedback systems	P, Cr	DS	Str, Beh	M	E/P	ES
5.2 Treatment & Rehabilitation							
ID	**Technology**	**Sector**	**Auto**	**Data**	**Equity**	**Transp**	**AI Cap**

5.2.1	Mental health screening/triage	P, Ct, Cr, CS	HR	Beh, Str	M	P	P/C
5.2.2	Mental health treatment platforms	Ct, Cr, CS	DS	Beh, Str	M	E	ES, GenAI
5.2.3	Substance abuse treatment tools	Ct, Cr, CS	DS	Beh, Str	M	P	P/C, ES, GenAI
5.2.4	Educational assessment/placement	Cr, CS	HR	Beh, Str	M	E/P	P/C, ES, GenAI
5.2.5	Educational support delivery	Cr, CS	DS	Beh, Str	M	E	ES, GenAI
5.3 Reentry & Support Services							
ID	**Technology**	**Sector**	**Auto**	**Data**	**Equity**	**Transp**	**AI Cap**
5.3.1	Employment matching/assistance	Cr, CS	HR	Str	M	E	P/C, ES, GenAI
5.3.2	Housing placement support	CS	HR	Str	M	E	Plan, GenAI
5.3.3	Benefits enrollment assistance	CS	FA/DS	Str	L	E	ES, NLP, GenAI
5.3.4	Family reunification tools	CS	DS	Str	L	E	ES
5.3.5	Peer support matching	CS	HR	Str, Beh	M	E/P	P/C
5.3.6	Record expungement/post-conviction relief	Ct, CS	DS/HR	Str	M	P	NLP, ES, GenAI
5.4 Community Engagement							
ID	**Technology**	**Sector**	**Auto**	**Data**	**Equity**	**Transp**	**AI Cap**
5.4.1	Chatbots for public information	P, Ct	FA	Com	L	E	NLP, ES, GenAI
5.4.2	Tip line analysis	P	HR	Com	M	P	NLP
5.4.3	Community feedback analysis	P	DS	Com, Str	M	P	NLP, GenAI
5.4.4	Victim services navigation	P, Ct, CS	DS	Str	L	E	ES, NLP, GenAI
5.4.5	Legal assistance	P, Ct, CS	FA/DS	Str, Com	M	E	NLP, ES
5.4.6	Family communication and visitation support	Cr, CS	FA/DS	Com, Str	L	E/P	NLP, ES

Appendix B. Data Types

Including data types as a core dimension of the taxonomy is essential for understanding how AI systems derive their authority, risk, and impact within the criminal justice system. AI applications cannot be fully assessed based on function alone; the nature of the data they rely on shapes what a system can infer, how intrusive it is, and what kinds of errors or harms it may produce. By explicitly identifying data types, the taxonomy links technical capability to institutional practice and governance concern. This appendix provides a brief definition and examples of the type of data that may be used in the AI technologies and tools.

Biometric data refers to physiological or behavioral characteristics used to identify, verify, or classify individuals. In this taxonomy, biometric data include facial images, fingerprints, voiceprints, iris or retinal scans, gait patterns, and DNA profiles. These data are uniquely persistent and difficult to alter, which makes errors, misuse, or unauthorized reuse particularly consequential. Biometric data are most often used in identification, verification, and surveillance applications.

Behavioral data captures observed or inferred actions, activities, and patterns of conduct over time. This includes compliance behavior, movement patterns, communication activity, program participation, institutional conduct, and other indicators of how individuals act within monitored environments. Behavioral data are often context-dependent and may reflect interpretation or inference, rather than direct measurement. Their use is central to risk assessment, prediction, and intervention systems. Additionally, behavioral data may be inferred from video, communications, or geospatial inputs.

Geospatial data refers to information that identifies or infers physical location, movement, or spatial relationships. Examples include GPS coordinates, geofencing boundaries, patrol areas, hotspot maps, address histories, and facility locations. Geospatial data are widely used in surveillance, supervision, and resource allocation applications. Risks associated with geospatial data increase with precision, persistence, and population coverage.

Communications data include the content or metadata of spoken, written, or digital communications. This encompasses phone calls, text messages, emails, social media activity, tips, interviews, and recorded statements. Communications data are typically unstructured and require natural language or speech processing for analysis. Because they capture expressive activity, their collection and use raise heightened concerns related to privacy, consent, and free expression.

Video data consists of visual recordings captured through cameras and related systems, including body-worn cameras, fixed surveillance cameras, and facility monitoring systems. Video data may be analyzed manually or processed using computer vision to detect objects,

behaviors, or events. Although often perceived as objective records, video data require interpretation and can enable continuous or automated monitoring when combined with AI.

Structured data refers to standardized, tabular information generated through routine administrative and operational processes. This includes case records, charges, court dates, sentencing information, supervision conditions, compliance logs, scheduling data, and performance metrics. Structured data are foundational to operations, case management, and decision support systems. While often treated as neutral, structured data can encode historical practices and institutional bias and often aggregate outputs from other data types.

Educational data encompasses information related to learning, training, assessment, and skill development. This includes training performance, assessment results, curriculum progression, and educational placement for both justice personnel and justice-involved individuals. Educational data are primarily used in training, rehabilitation, and development applications. Their impact depends on how closely automated assessments are tied to access, advancement, or sanctions.

These data serve as a proxy for risk and sensitivity. Biometric, behavioral, communications, and geospatial data are inherently more intrusive and persistent than structured or educational data, and their use often implicates civil liberties, due process, and equity concerns. Making these data visible within the taxonomy allows readers to distinguish between applications that differ in function but rely on similarly sensitive data sources, highlighting where heightened oversight may be warranted.

These data also reveal pathways of influence and compounding effects across the system. Structured data often aggregate decisions and observations derived from other data types, while behavioral data are frequently inferred from video, communications, or geospatial inputs. Including data types helps trace how information collected for one purpose can be repurposed, amplified, or operationalized elsewhere, enabling a more systemic understanding of AI deployment, rather than isolated tool-level analysis.

Finally, data type classification supports comparability, transparency, and governance alignment. Using a consistent, limited set of data categories allows policymakers, practitioners, and researchers to compare applications across sectors and capability areas without requiring technical expertise. This makes the taxonomy usable as a governance tool, not just a descriptive catalog, and grounds discussions of accountability, oversight, and safeguards in the concrete realities of data collection and use.

Appendix C. Methodological Approach to Assessing Equity via Fairness and Distributional Risk

Rather than assigning normative scores or predicting actual equity outcomes, this framework reflects observable properties of system design, deployment, and governance that shape the likelihood that errors, limitations, or biases produce uneven or hard-to-correct effects. Each dimension is grounded in empirical literature and is intended to be applied descriptively and transparently. Appendix C.1 presents the set of analytic dimensions used to characterize equity, or potential fairness, and risks associated with AI applications in criminal justice contexts.

Importantly, no single dimension is treated as determinative. Equity risk emerges from the interaction among dimensions, with some dimensions acting as multipliers. For example, early-stage systems may present lower risk when outputs are routinely checked and contextualized, but higher risk when errors propagate downstream or influence future data collection through feedback loops. Similarly, a broader scope of impact does not necessarily imply greater fairness, as population-level systems may be more visible and subject to greater scrutiny than individual-level applications.

Appendix C.1. Fairness and Distributional Risk Dimensions for AI Applications

Risk Dimension	Description	Analytic Options (Illustrative, Non-Exhaustive)
Stakes of the Output	Consequences associated with acting on the system's output	• Informational or interpretive (e.g., translation, transcription) • Prioritization or triage support • Supervisory or administrative action support • Decision-relevant for rights, liberty, access to services, or legal outcomes
Position in the Decision Process	Where the system operates within a broader workflow	• Early-stage information shaping • Mid-process evaluation or prioritization • Late-stage decision support or triggering
Downstream Reliance	Degree to which outputs are reused, propagated, or treated as authoritative	• Outputs contextualized and independently checked • Outputs inform judgment but are not determinative • Outputs routinely reused or embedded in downstream systems • Outputs treated as authoritative or default
Error Detectability	Ease with which errors can be identified or validated	• Errors readily observable through input-output comparison • Errors detectable through routine review or auditing • Errors difficult to detect without specialized access or analysis
Contestability & Meaningful Remedy	Ability of users or affected people to challenge outputs and pursue corrections	• Clear mechanisms for review and correction • Limited or indirect avenues for challenge • Outputs not directly contestable by affected parties
Scope of Impact	Number and type of people or groups affected by outputs	• Individual-level effects • Group or cohort-level effects • Population- or community-level effects

Human Oversight & Discretion	Nature and meaningfulness of human involvement	• Advisory use only (no automation) • Human-in-the-loop with meaningful discretion • Formal review with constrained discretion • De facto automated decision-making
Error Propagation Risk	Likelihood that errors influence subsequent decisions	• Errors isolated to a single use • Errors may influence subsequent analysis • Errors likely to propagate across systems or decisions
Data Generating Process	Nature of the data used to train or operate the system	• Data reflects direct observations or physical signals • Data reflects administrative or enforcement decisions • Data reflects discretionary human judgments • Data aggregates across heterogeneous institutional practices
Feedback Loop Potential	Extent to which system outputs affect future data inputs	• No feedback into future data • Indirect feedback through human decisions • Direct feedback into operational or training data • Continuous or automated retraining on outputs
System Transparency	Visibility of inputs, assumptions, and logic	• Fully transparent inputs and rules • Partially transparent with documentation • Opaque or proprietary logic • Adaptive or self-updating logic with limited auditability
Governance and Safeguards	Formal oversight and accountability mechanisms	• Clear policies and regular auditing • Defined guidance with limited monitoring • Minimal or ad hoc governance
Note: These dimensions are intended to be evaluated jointly. No single dimension is determinative of fairness or distributional risk, and broader scope of impact does not necessarily imply greater risk. Risk arises from interactions among system design, deployment context, and institutional safeguards.		

Appendix D. Primary Fairness & Distributional Risk Dimensions of Equity Risk Score

Across the taxonomy, equity tags follow a consistent structural pattern based on a small set of dimensions. High-Equity risk systems are typically driven by the convergence of four to five core dimensions: high stakes of the output, strong downstream reliance on model results, low error detectability, limited contestability, and low system transparency. These tags reflect systems' direct influence on rights or liberty and the difficulty of meaningful challenge. Medium-Equity risk systems are usually explained by a narrower combination of two to four dimensions, most often involving moderate stakes of the output (e.g., prioritization rather than rights determination), the system's position in the decision process, downstream reliance, and variable error detectability. In contrast, Low-Equity risk systems are generally driven by only one or two dimensions, primarily low-stakes, informational or administrative outputs and readily observable errors. This makes their impacts easier to detect, explain, and correct.

Appendix D highlights the leading equity risk factors described in Chapter 2 that lead to the determination of the Equity Risk level as shown in the AI Taxonomy for the Criminal Justice Context (Appendix A.1). Appendix D.1 classifies justice-related technologies using a small set of classification-driving dimensions that determine fairness, equity, and transparency risk, rather than descriptive system features. It is structured around where a system sits in the workflow, the stakes of its outputs, how outputs are relied upon downstream, how easily errors can be detected, and whether affected parties have meaningful opportunities to contest outcomes. Technologies are assigned equity labels based strictly on these drivers, ensuring consistent risk categorization across different use cases and sectors.

Five Factor Rule: For clarity of Appendix D.1, technologies are classified using five primary fairness and distributional risk factors: (1) Stakes of the Output, (2) Decision Position in the Workflow, (3) Downstream Reliance, (4) Error Detectability, and (5) Contestability & Meaningful Remedy. These dimensions were selected because they collectively capture the core structural characteristics that shape equity risk across justice-adjacent workflows. Importantly, these drivers operate in two distinct modes: (a) risk-amplifying factors (e.g., high stakes, authoritative downstream reliance, difficult error detectability) that increase classification risk, and (b) risk-mitigating factors (e.g., early-stage decision position, clear contestability mechanisms, readily observable errors) that lower classification risk. The interaction among these factors, particularly the presence of mitigating dimensions, determines final classification. Secondary factors (e.g., feedback loop potential, system transparency, governance controls) were also evaluated; they influence classification when they materially alter the risk trajectory.

Minimal Factor Constraint: Each row lists only those factors that necessarily influence classification for the technology's typical deployment. Dimensions that are relevant but not classification-determining (e.g., data source characteristics, transparency mechanisms, governance controls) are intentionally excluded to avoid descriptive padding.

Intended Use Assumption: Classifications assume standard operational use in justice, health, or education workflows, along with human oversight and non-automated decision authority, unless otherwise specified. Alternative deployments (e.g., fully automated decision-making or mandatory reliance) may warrant additional review and assessment.

Appendix D.1. Primary Fairness & Distributional Risk Dimensions of Equity Risk Score

Taxonomy ID	Technology	Taxonomy Equity Risk	Primary Equity Risk Factors
1.1.1	Pretrial risk	H	Stakes: Decision relevant for liberty Downstream Reliance: Outputs treated as authoritative Contestability: Limited or indirect avenues for challenge
1.1.2	Recidivism prediction	H	Stakes: Decision relevant for liberty Downstream Reliance: Outputs treated as authoritative Error Detectability: Errors difficult to detect
1.1.3	Violence risk assessment	H	Stakes: Decision relevant for safety and liberty Downstream Reliance: Outputs treated as authoritative Error Detectability: Errors difficult to detect
1.1.4	Institutional misconduct prediction	M	Stakes: Supervisory or administrative action support Downstream Reliance: Outputs inform restrictive conditions Contestability: Limited avenues for challenge
1.1.5	Supervision violation risk	H	Stakes: Decision relevant for liberty Downstream Reliance: Outputs treated as authoritative Error Detectability: Errors difficult to detect
1.2.1	Crime forecasting/predictive policing	H	Stakes: Population-level enforcement prioritization Decision Position: Early-to mid-stage operational planning (not determinative in individual cases, but shapes enforcement patterns)
1.2.2	Hotspot identification	H	Stakes: Resource allocation Error Detectability: Errors not readily contestable; difficult to isolate absent counterfactuals
1.2.3	Population management forecasting	M	Stakes: Supervisory or administrative planning Decision Position: Early-stage planning support; outputs inform aggregate resource projections rather than individual determinations

1.2.4	Demand prediction (dockets, capacity)	L	Stakes: Administrative capacity planning Error Detectability: Errors readily observable
1.3.1	Security threat group identification	H	Stakes: Decision relevant for restrictive conditions Downstream Reliance: Outputs treated as authoritative Contestability: Limited avenues for challenge
1.3.2	Radicalization risk	H	Stakes: Decision relevant for surveillance or intervention Downstream Reliance: Outputs treated as authoritative Error Detectability: Errors difficult to detect
1.3.3	Officer safety alert systems	M	Stakes: Decision relevant for safety and liberty Decision Position: Early-stage information shaping Downstream Reliance: Operational reliance under time pressure Contestability & Meaningful Remedy: Non-contestable flags
1.4.1	Rehabilitation and skills empowerment	H	Stakes: Access to services Downstream Reliance: Outputs determine program eligibility/prioritization or similar Contestability: Limited avenues for initial placement challenge
1.4.2	Early intervention and diversion support	H	Stakes: Access to alternatives to prosecution Decision Position: Early-to mid-stage gatekeeping (determines diversion eligibility) Downstream Reliance: Outputs inform eligibility decisions
1.4.3	Reentry planning and resource forecasting	M	Stakes: Access to services
2.1.1	Facial recognition	H	Stakes: Information relevant for rights and liberty Downstream Reliance: Outputs treated as authoritative Error Detectability: Difficult to detect
2.1.2	Fingerprint matching	M	Stakes: Legal identification Decision Position: Early-stage investigative lead (not determinative) Contestability: Clear review mechanisms
2.1.3	Voice recognition	M	Stakes: Investigative prioritization Error Detectability: Difficult to detect Decision Position: Mid-stage investigative lead (not determinative)
2.1.4	Iris/retinal scanning	L	Stakes: Administrative identification Error Detectability: Readily observable
2.1.5	Gait analysis	M	Stakes: Investigative prioritization Error Detectability: Difficult to detect Decision Position: Early-to mid-stage investigative targeting (not determinative)
2.1.6	DNA matching algorithms	M	Stakes: Legal outcomes Contestability: Formal review mechanisms Error Detectability: Detectable with specialized analysis
2.2.1	Automated video analytics	M	Stakes: Investigative prioritization

			Decision Position: Early-stage investigative prioritization Error Detectability: Difficult to detect
2.2.2	Body-worn camera analysis	M	Stakes: Accountability and investigation Downstream Reliance: Outputs reused in proceedings
2.2.3	Behavior detection systems	H	Stakes: Safety-critical intervention Error Detectability: Difficult to detect Contestability: Errors rarely contestable in real time; limited avenues for challenge to behavioral assessment Downstream Reliance: Outputs often trigger immediate intervention or segregation
2.2.4	Crowd monitoring	H	Stakes: Population-level surveillance Error Detectability: Errors difficult to validate; discriminatory targeting not readily observable
2.2.5	Contraband detection	M	Stakes: Security enforcement Downstream Reliance: Outputs trigger searches
2.3.1	Automated license plate readers	M	Stakes: Investigative surveillance Decision Position: Early-stage investigative surveillance (not determinative) Downstream Reliance: Outputs reused
2.3.2	Electronic monitoring analytics	H	Stakes: Decision relevant for safety and liberty Downstream Reliance: Outputs treated as authoritative
2.3.3	Geofencing & location verification	M	Stakes: Decision relevant for safety and liberty Decision Position: Ongoing liberty monitoring (not gate-keeper) Error Detectability: Difficult to contest
2.3.4	Facility tracking systems	L	Stakes: Administrative monitoring Error Detectability: Readily observable
2.4.1	Social media analysis	M/H	Decision Position: Early- to mid-process evaluation; outputs inform investigation Contestability & Meaningful Remedy: Limited avenues for challenge Error Detectability: Difficult to validate in context
2.4.2	Phone call analysis	M	Stakes: Investigative evidence Downstream Reliance: Outputs reused
2.4.3	Email/message screening	M	Stakes: Surveillance and enforcement Contestability: Limited avenues Error Detectability: Errors detectable through system audit Decision Position: Mid-stage surveillance (not determinative)
2.4.4	Dark web monitoring	M	Stakes: Threat detection Error Detectability: Difficult to validate
2.5.1	Gunshot detection	L/M	Stakes: Safety-critical response Error Detectability: Errors detectable post-incident
2.5.2	Acoustic analysis	M	Stakes: Investigative prioritization Error Detectability: Difficult to detect

2.5.3	Anomaly detection systems	M	Stakes: Investigative prioritization Error Detectability: Difficult to detect
3.1.1	Crime pattern recognition	M	Stakes: Investigative prioritization Decision Position: Early-stage investigative targeting
3.1.2	Link analysis/network mapping	M	Stakes: Investigative targeting Decision Position: Early to mid-process investigative targeting Downstream Reliance: Outputs reused
3.1.3	Digital forensics & evidence	L	Stakes: Legal outcomes Contestability: Formal review
3.1.4	Investigative lead generation	M	Stakes: Investigative prioritization Decision Position: Early-stage lead prioritization (not determinative) Downstream Reliance: Informative
3.1.5	Case and evidence analysis	M	Decision Position: Mid-process evaluation and prioritization Downstream Reliance: Re-prioritization of investigative focus Error Detectability: Difficult to detect without holistic case review
3.2.1	E-discovery & document review	L	Stakes: Legal outcomes Error Detectability: Auditable
3.2.2	Case law research & citation	L	Stakes: Legal reasoning support
3.2.3	Case similarity matching	M	Stakes: Advisory legal support Error Detectability: Errors difficult to assess; limited transparency Contestability: Limited meaningful challenge to legal reasoning
3.2.4	Charging recommendations	H	Stakes: Legal outcomes Downstream Reliance: Authoritative
3.2.5	Sentencing recommendations	H	Stakes: Decision relevant for safety and liberty Downstream Reliance: Authoritative
3.3.1	Patrol deployment optimization	H	Stakes: Population-level enforcement Error Detectability: Errors difficult to isolate absent counterfactual comparison of neighborhoods Decision Position: Early-stage planning with direct operational implementation
3.3.2	Call prioritization	M	Stakes: Emergency response Decision Position: Early-stage emergency dispatch Downstream Reliance: Immediate
3.3.3	Case prioritization & assignment	M	Stakes: Resource allocation Decision Position: Mid-stage; outputs guide workload distribution but do not determine case outcomes
3.4.1	Treatment program recommendations	H	Stakes: Influences access to services and conditions Downstream Reliance: Outputs determine program placement and conditions Contestability: Errors difficult to contest in real time
3.4.2	Diversion screening	H	Stakes: Influences pathway into or out of formal processing

			Downstream Reliance: Outputs determine pathway into or out of formal processing Contestability: Errors contestable but burdensome; limited meaningful challenge mechanisms
3.4.3	Service needs assessment	M	Stakes: Access to services Error Detectability: Errors difficult to detect at initial assessment Contestability: Limited avenues for challenging assessment
3.4.4	Reentry planning support	M	Stakes: Access to services; influences post-release conditions Decision Position: Mid-process service planning; outputs guide reentry service coordination but do not determine eligibility or release conditions
3.4.5	Classification & housing	H	Stakes: Influences custodial conditions and safety Downstream Reliance: Outputs determine custodial conditions and safety measures Contestability: Errors difficult to contest; limited appeal mechanisms
4.1.1	Caseload management systems	L	Stakes: Administrative support Error Detectability: Readily observable
4.1.2	Docket management	L	Stakes: Administrative support Error Detectability: Readily observable
4.1.3	Automated scheduling	L	Stakes: Administrative support Error Detectability: Readily observable
4.1.4	Workflow automation	L	Stakes: Administrative support Error Detectability: Readily observable
4.1.5	Case tracking & status updates	L	Stakes: Administrative support Error Detectability: Readily observable
4.2.1	Automated report generation	M	Stakes: Influences interpretation and documentation
4.2.2	NLP for reports	M	Stakes: Influences narrative framing
4.2.3	Transcription services	L	Stakes: Influences record accuracy
4.2.4	Automated notifications/reminders	L	Stakes: Influences compliance and participation
4.2.5	Interpretation/translation services	M	Stakes: Influences comprehension and access Error Detectability: Errors may cascade before verification
4.3.1	Warrant checking automation	M	Stakes: Liberty-related conditions Error Detectability: Errors may cascade through arrest processes before verification
4.3.2	Condition compliance monitoring	M	Stakes: Liberty-related conditions Downstream Reliance: Reused
4.3.3	Court appearance tracking	L	Stakes: Liberty-related conditions Downstream Reliance: Reused
4.3.4	Payment/fee tracking	L	Stakes: Liberty-related conditions Downstream Reliance: Reused
4.4.1	Performance dashboards	L	Stakes: Organizational oversight

4.4.2	Quality assurance systems	L	Stakes: Organizational oversight
4.4.3	Workload balancing	M	Stakes: Organizational oversight Decision Position: Mid-stage operational planning; outputs inform staff allocation and potentially service delivery, but do not determine case outcomes or individual decisions
5.1.1	VR/simulation training	L	Stakes: Professional development
5.1.2	De-escalation training systems	L	Stakes: Professional development
5.1.3	Use-of-force scenario training	M	Stakes: Training influences use-of-force judgments that affect safety and liberty and influences high-risk decision-making
5.1.4	Implicit bias training	L	Stakes: Professional development
5.1.5	Adaptive learning systems	L	Stakes: Professional development
5.1.6	Performance feedback systems	M	Stakes: Professional development
5.2.1	Mental health screening/triage	M	Stakes: Access to services Decision Position: Early-stage routing Error Detectability: Difficult to detect misclassification Contestability & Meaningful Remedy: Limited or indirect
5.2.2	Mental health treatment platforms	M	Stakes: Treatment planning and delivery Decision Position: Mid-process decision support Downstream Reliance: Outputs inform clinical judgment
5.2.3	Substance abuse treatment tools	M	Stakes: Access to services Decision Position: Early- to mid-process decision support Contestability & Meaningful Remedy: Limited challenge mechanisms
5.2.4	Educational assessment/placement	M	Stakes: Access to services Downstream Reliance: Routine reuse in placement decisions Contestability & Meaningful Remedy: Limited avenues for appeal
5.2.5	Educational support delivery	M	Decision Position: Ongoing instructional support Downstream Reliance: Outputs inform instructional adjustments
5.3.1	Employment matching/assistance	M	Stakes: Access to services
5.3.2	Housing placement support	M	Stakes: Access to services Contestability: Errors contestable but burdensome; limited appeal mechanisms Error Detectability: Housing placement errors difficult to reverse
5.3.3	Benefits enrollment assistance	L	Stakes: Access to services
5.3.4	Family reunification tools	L	Stakes: Access to services
5.3.5	Peer support matching	M	Stakes: Access to services

			Error Detectability: Errors difficult to detect; limited feedback on matching quality
5.3.6	Record expungement/relief tools	M	Stakes: Access to services Contestability: Errors contestable but complex; limited accessibility for self-represented individuals
5.4.1	Public-facing chatbots	L	Stakes: Informational
5.4.2	Tip line analysis	M	Stakes: Investigative prioritization Error Detectability: Errors difficult to contest; limited transparency
5.4.3	Community feedback analysis	M	Stakes: Policy input Error Detectability: Errors difficult to contest in aggregated feedback
5.4.4	Victim services navigation	L	Stakes: Access to services
5.4.5	Legal assistance tools	M	Stakes: Access to legal help
5.4.6	Family communication & visitation	L	Stakes: Access to services

Abbreviations

AI	Artificial Intelligence
ALPR	Automated License Plate Reader
CBT	Cognitive Behavioral Therapy
CCJ	Council on Criminal Justice
CJIS	Criminal Justice Information Services
CODIS	Combined DNA Index System
COMPAS	Correctional Offender Management Profiling for Alternative Sanctions
CV	Computer Vision
DARPA	Defense Advanced Research Projects Agency
DS	Decision Support Only
FA	Fully Automated
FBI	Federal Bureau of Investigation
GAO	Government Accountability Office
GenAI	Generative Artificial Intelligence
HR	Human Review Required
IAFIS	Integrated Automated Fingerprint Identification System
ID	Identification (taxonomy node indicator)
LSI-R	Level of Service Inventory–Revised
NCIC	National Crime Information Center
NGI	Next Generation Identification
NLP	Natural Language Processing
P/C	Predictive and Classification Systems
Plan	Planning Systems
PSA	Public Safety Assessment
RFID	Radio Frequency Identification
VR	Virtual Reality

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