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A Silicon Flatirons Artificial Intelligence Initiative Roundtable: “The Growing Use of Artificial Intelligence by Government in Courts and Agencies”

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Outcomes Report

Executive Summary of the Roundtable

Artificial Intelligence (AI), and in particular Machine Learning (ML) systems, have become potent tools to reduce costs, improve efficiency, and enhance decision making. As AI techniques have become more popular in the private sector, government agencies have also begun experimenting with these tools in a variety of contexts from enforcement to adjudication. While these tools may sometimes reduce the costs of governance and provide improved decision-making, the use of these technologies in government also invites new challenges.

On December 2, 2020, the AI Initiative of the Silicon Flatirons Center for Law, Technology, and Entrepreneurship at the University of Colorado Law School hosted a roundtable to explore and analyze how AI tools are currently being used in the federal government.¹ In the first session, panelists identified and discussed where AI technologies are being used to conduct administrative enforcement or adjudicate legal disputes. In the second session, panelists analyzed the lessons and best practices from these and other examples of AI use in government. Panelists also identified areas where these tools are currently being used, or have the potential to be used, in ways that can improve governance and administrative functioning. However, panelists were generally skeptical of AI and ML as a panacea for all government functions, and were particularly concerned with the problems these technologies create, rather than the problems they solve.

¹ See *The Growing Use of Artificial Intelligence by Government in Courts and Agencies*, Silicon Flatirons Center (Dec. 2020), <https://siliconflatirons.org/events/the-growing-use-of-artificial-intelligence-by-government-in-courts-and-agencies/>.

Part I of this report briefly describes the various current and proposed examples of AI use by government agencies and courts to adjudicate disputes and enforce regulations. Part II discusses the lessons panelists identified from current efforts at using AI/ML in government, as well as lessons to be learned from private sector uses of these tools.

Part I: Where is AI being Used in the Court System and Federal Agencies

Panelists identified two key areas where AI tools are being used in government agencies: adjudication and enforcement. While most of these examples were within the federal government, panelists noted that state agencies have also begun experimenting with using ML to improve their decision-making. Panelists also noted that adjudication and enforcement are better suited to the current state of AI, but that as technology improves, these tools may be used for decisions that are closer to the heart of the state as well as traditional core judicial functions.

A. Adjudication

Participants received a detailed presentation on how AI/ML tools are currently being used by the federal government to aid in the adjudication of patent and trademark applications. The United States Patent and Trademark Office (USPTO) recently developed a suite of ML tools designed to aid employees in decision-making.² In the patent context, ML tools are being used to help agents conduct prior art searches. By using AI systems, patent agents can more easily find relevant prior art in order to make determinations about the patentability of new applications. Given the existing backlog in patent adjudication, this use of AI has the potential to speed up a critical and time-sensitive area of government adjudication.³ AI has also been used to help create and track more granular patent codes to make prior art searches easier in the first place. In the trademark context, AI/ML tools are being used to aid agents in identifying relevant design codes to better compare applications against existing marks.⁴ ML is also being used to help these agents identify fraudulent applications.

At the USPTO, while AI/ML tools have been integrated into the decision-making process, these tools are merely assisting human decision-making, not supplanting it. In tests, patent and trademark agents found that these tools offered them valuable information that they otherwise might not have found. The USPTO has also been using AI to track the explosion in patent applications for new AI/ML technologies.

Panelists also discussed the potential for AI/ML tools to be used in other adjudicatory contexts, such as determining eligibility for government benefits and detecting fraud in these

² See *Director's Forum: A Blog for USPTO's Leadership*, U.S. Patent and Trademark Office (Mar. 18, 2021), <https://www.uspto.gov/blog/director/entry/artificial-intelligence-tools-at-the>.

³ See generally *USPTO Director looks to decrease patent backlog by improving workforce efficiency*, Federal News Network (Jun. 12, 2018) <https://federalnewsnetwork.com/workforce/2018/06/an-inventor-himself-new-pto-director-prepares-to-sign-nations-10-millionth-patent/>.

⁴ See *Public Views on Artificial Intelligence and Intellectual Property*, U.S. Patent and Trademark Office (Oct. 2020) https://www.uspto.gov/sites/default/files/documents/USPTO_AI-Report_2020-10-07.pdf.

programs. These efforts have been considered successful in areas of the law that can be easily “mechanized” such that decisions can be made by computer programs that employ a rules-based, knowledge representation AI approach. A classic example of an easily mechanizable area of the law is the tax code. While not necessarily an AI tool on par with ML modern examples, TurboTax is a fairly popular example of a rules-based software application designed to mechanize an area of regulatory compliance.⁵ Panelists argued that government programs like veterans’ benefits are additionally well-suited to mechanization in similar ways. Veterans Affairs has considered using AI/ML tools to aid in the processing and adjudication of benefit applications.⁶ While the VA faces a significant backlog in applications, panelists were skeptical of tools being used in this manner. Panelists also raised concerns about similar programs being explored at the state level to make similar determinations about public benefits.

B. Enforcement

At the federal level, agencies have begun experimenting with using AI/ML tools to aid in enforcement of federal regulations, such as securities law and spectrum management. At the Securities and Exchange Commission (SEC), regulators are experimenting with using AI/ML tools to identify questionable trading behavior.⁷ Just like programs discussed at the USPTO, these tools are merely providing humans with information in order to make more informed decisions and allocate enforcement resources. Regulators interpreting these data are typically skeptical of the results, but these data can still be incredibly valuable in allocating scarce resources.⁸

While not strictly speaking an AI tool, mechanized decision-making has also found a home at agencies like the Federal Communications Commission (FCC) to prevent and manage interference between different services. The Commission recently opened up the six GHz band to unlicensed use, primarily to expand the available spectrum for Wi-Fi, but sought new strategies to protect incumbent users that rely on adjacent bands for fixed wireless service.⁹ Unlicensed users in this band must rely on “Automated Frequency Coordination” (AFC) technology to enable service in this band.¹⁰ Rather than shipping devices that can operate within a defined set of bands, AFC allows devices to select open bands in their area based on the potential for interference with incumbent services.¹¹ Similar technologies have also been

⁵ See e.g., *Reimagining Business with AI*, WIRED (Aug. 2018) <https://www.wired.com/brandlab/2018/08/reimagining-business-ai/>.

⁶ See e.g., *Artificial Intelligence*, U.S. Veterans Affairs | Veterans Health Administration Innovation Ecosystem, <https://www.va.gov/INNOVATIONECOSYSTEM/views/solutions/artificial-intelligence.html> (last accessed, Mar. 20, 2021).

⁷ See *Government by Algorithm: Artificial Intelligence in Federal Administrative Agencies*, Administrative Conference of the United States (Feb. 2020) <https://www-cdn.law.stanford.edu/wp-content/uploads/2020/02/ACUS-AI-Report.pdf>.

⁸ See Scott W. Bauguess, *The Role of Big Data, Machine Learning, and AI in Assessing Risks: a Regulatory Perspective*, U.S. Securities and Exchange Commission (Jun. 21, 2017) <https://www.sec.gov/news/speech/bauguess-big-data-ai>.

⁹ See *In the Matter of Unlicensed Use of the 6 GHz Band*, Report and Order and Further Notice of Proposed Rulemaking, Federal Communications Commission (Apr. 24, 2020) <https://docs.fcc.gov/public/attachments/FCC-20-51A1.pdf>

¹⁰ *Id.* at ¶12.

¹¹ *Id.*

proposed to help coordinate spectrum use between different users within the Citizens Broadband Radio Service band.¹²

State governments have also sought to use AI/ML tools to aid in enforcement decisions. CompStat—a program that originated in New York City in the 1990s—has aimed to collect data to prioritize and allocate law enforcement resources, though the program has drawn its fair share of criticism.¹³ While “predictive policing” still remains controversial and claimed benefits are largely unproven, efforts continue to integrate AI/ML tools into law enforcement decision-making, despite the potential for improper use.¹⁴

Outside of the law enforcement context, state agencies have experimented with using AI/ML tools in other, less critical enforcement contexts where rules and regulations can be easily mechanized. Building codes are one such area of state law where AI/ML technologies are being explored.¹⁵ Investing time and resources into mechanizing state regulatory schemes like this requires a significant commitment of resources, but also offers tremendous potential to both regulators and those they regulate. Mechanized tools can allow regulators to evaluate and understand how changes in existing regulations will affect existing buildings, as well as those in the construction pipeline. For architects and contractors these tools can simplify the process of ensuring compliance with building codes, especially in situations where these entities frequently work across state lines with divergent regulations.

This is by no means an exhaustive list of the various existing, or proposed, uses of AI/ML tools by government agencies. But these diverse applications provided comprehensive if not exhaustive lens to examine and analyze the best practices for the use of AI/ML tools by government officials, the problems these tools are well-suited to address, and areas where these tools should be strictly limited or prohibited.

Part II: Lessons for AI/ML Use by Government Agencies

Panelists identified several lessons from existing examples of AI/ML use by government agencies, as well as other examples from the private sector. While some panelists identified areas where AI tools have been implemented successfully to address problems, the bulk of the discussion focused on the problems that these technologies can create, uncover, or exacerbate.

¹² See *In the Matter of Promoting Investment in the 3550-3700 MHz Band*, Report and Order, Federal Communications Commission (Oct. 24, 2020) <https://docs.fcc.gov/public/attachments/FCC-18-149A1.pdf>.

¹³ German Lopez, *This Policing Innovation helped fight crime. But it also led to more corruption*, Vox (Jul. 27, 2015) <https://www.vox.com/2015/7/26/9036859/compstat-police-corruption>.

¹⁴ Noah Feldman, *The Future of Policing Is Being Hashed Out in Secret*, Bloomberg (Feb. 28, 2018) <https://www.bloomberg.com/opinion/articles/2018-02-28/artificial-intelligence-in-policing-advice-for-new-orleans-and-palantir>.

¹⁵ See Catherin Shu, *By automating code compliance UpCodes AI is ‘the spellcheck for buildings’*, Tech Crunch (Jun. 11, 2018) <https://techcrunch.com/2018/06/11/by-automating-code-compliance-upcodes-ai-is-the-spellcheck-for-buildings/>.

An oft-cited critique of AI and ML tools is that these systems are only as good as the data that is used to develop them.¹⁶ If these training data have bias, inconsistencies, or other flaws, those problems are inherited by the model.¹⁷ Because many ML techniques cannot be audited in the same way as traditional software programs, developers may be unaware about the nature or extent of these flaws in their systems.¹⁸ Predictive policing is certainly one area where this bias can create significant harm for those who are targeted or impacted,¹⁹ but this issue is common across a number of AI/ML systems used by government agencies.²⁰ For one, panelists raised concerns about inherited bias in systems being experimented with to determine eligibility for public benefits. But even systems like the USPTO AI tools may be similarly influenced by inherited bias in ways that impose additional costs policymakers should consider.

Panelists also discussed how the use of AI/ML tools in the private sector trained using historically-biased public data may entrench inequities. For example, panelists discussed an example of an effort between a major retailer and technology companies to develop an AI tool to help the company better resolve legal disputes from slip-and-fall to employment discrimination cases. While AI/ML legal tools like this have been touted for their ability to provide access to justice, panelists noted that in many cases these systems may be inexorably tied to biases and idiosyncrasies from the legal system itself.²¹

Beyond AI being tainted by bad data, panelists also questioned the demand for data that is being created by AI systems in the first place. Because these systems require vast amounts of data to train, those tasked with developing these systems may be incentivized to collect as much information, including personal or sensitive personal information, as possible. This can impose privacy costs that must be weighed against the benefits offered by these systems, both to the individual as well as specific communities. Individuals have increasingly voiced opposition to pervasive data collection by private companies, as well as similar collection efforts by the government.²²

Another critique raised by panelists focused on how the use of AI and ML technologies shift traditional government decision-making in critical ways. First, AI/ML tools shift decision-making up from line-level enforcement staff to the management level. This shift moves decisions away from career staff to political appointees. To the extent these decisions are

¹⁶ See Ron Schmelzer, *The Achilles' Heel of AI*, Forbes (Mar. 7, 2019) <https://www.forbes.com/sites/cognitiveworld/2019/03/07/the-achilles-heel-of-ai/?sh=742afb697be7>.

¹⁷ *Id.*

¹⁸ See James Guszcza, et. al., *Why We Need to Audit Algorithms*, Harvard Business Review (Nov. 28, 2018) <https://hbr.org/2018/11/why-we-need-to-audit-algorithms>.

¹⁹ See Feldman, *supra* note 14.

²⁰ See David Freeman Engstrom & Daniel E. Ho, *Algorithmic Accountability in the Administrative State*, 37 Yale J. on Reg. (2020). Available at: <https://digitalcommons.law.yale.edu/yjreg/vol37/iss3/1>.

²¹ Engstrom, David Freeman and Gelbach, Jonah B., *Legal Tech, Civil Procedure, and the Future of Adversarialism* (March 9, 2020). University of Pennsylvania Law Review, Forthcoming, Available at SSRN: <https://ssrn.com/abstract=3551589>.

²² See Brooke Auxier, et. al., *Americans and Privacy: Concerned, Confused, and Feeling Lack of Control Over Their Personal Information*, Pew Research Center (Nov. 15, 2019) <https://www.pewresearch.org/internet/2019/11/15/americans-and-privacy-concerned-confused-and-feeling-lack-of-control-over-their-personal-information/>.

influenced by political bias, this can create uncertain and uneven results—especially where these tools are serving adjudicatory functions.

Second, AI/ML tools shift decision-making laterally away from lawyers to the technologists charged with developing these systems. Technocratic governance can be successful in certain instances but may be less desirable in others. For example, panelists were generally supportive of examples of these kinds of technocratic regulations being used in the spectrum context to manage scarcity and coordinate use between different classes of users.²³ But panelists were skeptical of these kinds of decisions when AI/ML tools are making, or providing insight on, decisions that have the force of law.²⁴

Finally, AI/ML tools shift decision-making out of government and into the hands of the private firms employed to develop these tools. In the first instance this shifting of decision-making may create additional legal complexities that the common law has yet to confront. Agencies must typically go through notice-and-comment rulemaking when issuing new rules, but it is currently unclear how the use of AI tools fits within this mold. When an agency issues rules, it is compelled to explain the process it used to come to the final result, and most importantly, explain why it decided against alternative suggestions.²⁵ Even if private firms are entirely forthcoming about their development process, AI tools cannot be audited or examined in ways that facilitate a notice-and-comment process. Even assuming that an agency invites comment before deciding to use an AI tool for enforcement and adjudication, commenters will not be able to unpack these models in ways that will facilitate informed analysis.

Conclusion

In some areas, panelists suggested that policymakers should be inherently skeptical of the promise of AI/ML tools. Panelists noted that in some areas, such as policing, it may be best to declare these areas “AI-free zones” or, at the very least, make concerted efforts to introduce friction to ensure that these technologies do not create more problems than they solve. This kind of “friction” may also be necessary in areas like administrative governance where AI/ML use is appropriate in some—but not all—contexts to ensure that these tools are not seen as a panacea. However, other panelists noted that in some areas, such as applications where AI tools are aimed at correcting systemic injustice, policymakers should seek to eliminate friction to the greatest extent possible.

²³ See e.g., 6 GHz Report and Order, *supra* note 9.

²⁴ See Calo, Ryan and Citron, Danielle Keats, *The Automated Administrative State: A Crisis of Legitimacy* (March 9, 2020). Emory Law Journal, Forthcoming, Available at SSRN: <https://ssrn.com/abstract=3553590>.

²⁵ See Solow-Niederman, Alicia, *Administering Artificial Intelligence* (November 29, 2019). 93 S. Cal. L. Rev. 633 (2020), Available at SSRN: <https://ssrn.com/abstract=3495725> or <http://dx.doi.org/10.2139/ssrn.3495725>.

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