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# Mitigating Ethical and Legal Risks of Modern AI at PNNL

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Pacific Northwest National Laboratory (PNNL) research supports the U.S. government’s policy to promote the innovative application of artificial intelligence (AI) while protecting U.S. interests, as well as the Department of Energy’s objective to coordinate responsible and trustworthy AI governance and capabilities.<sup>1</sup> This paper identifies the emerging ethical and legal risks posed by modern AI and describes how PNNL is mitigating those risks to innovate responsibly. We are prioritizing the ethical use of modern AI consistent with the proactive risk mitigations recommended in the DOE AI Risk Management Playbook. In addition, we have issued guidance to staff on the use of generative artificial intelligence (AI), emphasizing “the creative, analytical, and intellectual process must remain ‘a human endeavor.’” Humans must guide the process and be responsible for results presented to the scientific community.

### ***Promoting Trusted, Reliable, and Responsible AI***

PNNL is collaborating with global experts in law and ethics to be on the forefront in developing ethical standards to identify, evaluate, and mitigate evolving AI risks. Through its involvement with IEEE’s Ethics Certification Program for Autonomous and Intelligent Systems, PNNL is authorized to certify autonomous and intelligent systems in a range of trustworthy and ethical AI standards. We have developed a holistic approach for [Trusted and Responsible AI](#) and created tools that assist in accountability, transparency, fairness, and robustness.<sup>2</sup> In addition, a PNNL senior systems engineer is certified as an IEEE lead assessor and can train others to assist in scaling responsible innovation implementations, help increase the quality of AI, and build trust with DOE and other key stakeholders.

### ***Evaluating Legal Risks***

As modern AI continues to evolve, areas of potential legal risk and unintended consequences are emerging related to data integrity, protection and privacy, intellectual property, and decision-making in human resources (HR). Generative AI can produce information that is inaccurate, out-of-date, biased, or otherwise unreliable. In response, Federal and state oversight agencies are evaluating laws related to anti-discrimination, privacy, data security, and intellectual property. PNNL practices are being evaluated broadly by cross-organizational subject matter experts from legal, ethics, HR, IT, risk management, and security.

**Managing Data Integrity, Data Protection, and Privacy.** Appropriately managing data integrity, security, and privacy risks will be critical to achieve the beneficial outcomes that AI promises. There is a critical need to protect private, confidential, trade secret, and sensitive information, including Personally Identifiable Information (PII), Controlled Unclassified Information (CUI), and even classified information, from inadvertent disclosure. Requiring encryption and anonymized data, where appropriate, will mitigate those risks. PNNL’s Data Stewardship Board, which authorizes access to risk-sensitive data sets in PNNL research, is a resource. In addition, limiting collection, access, and use of sensitive data to only those functions that are required, regularly conducting independent audits of data quality, and taking

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<sup>1</sup> <https://www.federalregister.gov/documents/2019/02/14/2019-02544/maintaining-american-leadership-in-artificial-intelligence>; <https://www.energy.gov/ai/doe-ai-risk-management-playbook-airmp>  
<https://nvlpubs.nist.gov/nistpubs/ai/NIST.AI.100-1.pdf>

<sup>2</sup> <https://standards.ieee.org/industry-connections/ecpais/>

prompt corrective action to maintain accurate, timely, and complete data will protect privacy and data integrity and mitigate risk.<sup>3</sup>

**Protecting Intellectual Property.** Generative AI systems trained<sup>4</sup> on copyrighted works may generate content that resembles existing work without proper attribution or rights, potentially giving rise to plagiarism accusations or copyright infringement claims. In addition, copyright law requires the contribution of a human author. Thus, use of generative AI affects copyright registration<sup>5</sup> and could invalidate copyright ownership. To mitigate these risks, it is critical that researchers disclose the use of generative AI, document the generated content, and provide a description of the human-authored content.<sup>6</sup>

**Using AI in Employment Processes and Decisions.** HR departments are increasingly using AI in hiring processes, skill mapping, performance management, and succession planning. Generative AI is susceptible to algorithmic biases that can result in discriminatory treatment of employees. In effect, if AI influences who is hired, promoted, or receives a pay increase, it can be an instrument of unlawful employment discrimination.

States are already passing laws, and several bills introduced across the U.S. show active efforts to regulate the use of AI in employment decisions.<sup>7</sup> The Equal Employment Opportunity Commission (EEOC), Department of Justice, and other federal agencies recently issued a joint statement vowing to use existing laws to protect employees and the public from discrimination and bias arising from the use of AI.<sup>8</sup> The EEOC has also released technical assistance on how to assess adverse impact in software, algorithms, and AI used in employment selection procedures. Additionally, as referenced in DOE's AI Risk Management Framework, safeguards and criteria have been developed by a group of reputable businesses and institutions for use in evaluating HR vendors on their ability to detect, mitigate, and monitor algorithmic bias in workforce decisions.<sup>9</sup> PNNL is monitoring the latest laws and regulations and will implement appropriate algorithmic discrimination protections.

**Contractual Obligations and Click-Through Agreements.** AI platforms have embedded click-through agreements that govern the terms of use of these platforms and create a range of obligations, risks, and requirements that could be at odds with the DOE Prime Contract. These

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<sup>3</sup> <https://www.whitehouse.gov/ostp/ai-bill-of-rights/>;  
<https://www.federalregister.gov/documents/2020/12/08/2020-27065/promoting-the-use-of-trustworthy-artificial-intelligence-in-the-federal-government>

<sup>4</sup> <https://crsreports.congress.gov/product/pdf/LSB/LSB10922>

<sup>5</sup> [https://www.copyright.gov/ai/ai\\_policy\\_guidance.pdf](https://www.copyright.gov/ai/ai_policy_guidance.pdf)

<sup>6</sup> <https://www.federalregister.gov/documents/2023/03/16/2023-05321/copyright-registration-guidance-works-containing-material-generated-by-artificial-intelligence>

<sup>7</sup> For example, A) Illinois passed the Artificial Intelligence Video Interview Act, which governs the use of video interviewees for jobs focusing on:

(1) notice and consent; and (2) privacy and deletion rights. B) New York City's Department of Consumer and Worker Protection will begin enforcement of Local Law 144, which regulates the use of AI in employment decisions requiring bias audits, notifications to job candidates and employees about the use of AI tools and their right to request an accommodation or alternative process. In Maryland, HB 1202 prohibits employers from using facial recognition technology during an interview for employment to create a facial template without consent.

<sup>8</sup> <https://www.eeoc.gov/joint-statement-enforcement-efforts-against-discrimination-and-bias-automated-systems>

<sup>9</sup> [https://dataandtrustalliance.org/Algorithmic\\_Bias\\_Safeguards\\_for\\_Workforce\\_Overview.pdf](https://dataandtrustalliance.org/Algorithmic_Bias_Safeguards_for_Workforce_Overview.pdf) (Version 1.0, Jan. 2022)

embedded agreements may include indemnity, choice of law and confidentiality clauses, restrictions on use, copyright prohibitions, etc., that should be understood and accepted only by authorized individuals. Only AI systems that include terms, agreements, or obligations that align with laboratory requirements and that are vetted and approved through the Laboratory procurement process should be permitted and communicated to staff.

Embracing AI, while at the same time evaluating and managing risk, is critical to mission success. A good AI risk management strategy will include ongoing review of evolving government and industry guidance<sup>10</sup> and actual AI impact.

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<sup>10</sup> <https://www.nist.gov/artificial-intelligence>; <https://www.federalregister.gov/documents/2020/12/08/2020-27065/promoting-the-use-of-trustworthy-artificial-intelligence-in-the-federal-government>; <https://www.whitehouse.gov/ostp/ai-bill-of-rights/>

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