PUBLIC SUBMISSION

Received: May 29, 2025
Tracking No. mba-1zkl-dkxw
Comments Due: May 28, 2025 **Submission Type:** API

Docket: NSF-2025-OGC-0001
NITRD_FRDOC_0001

Comment On: NSF-2025-OGC-0001-0001
Request for Information: Development of a 2025 National Artificial Intelligence Research and Development Strategic Plan

Document: NSF-2025-OGC-0001-DRAFT-0303
Comment on FR Doc # 2025-07332

Submitter Information

Government Agency Type: State **Government Agency:** Dakota State University

General Comment

Comments attached via file upload.

Attachments

Request for Information on the Development of a 2025 National Artificial Intelligence Research and Development Strategic Plan v2

Executive Summary:
To maintain global leadership in artificial intelligence (AI), the United States must continuously refine its strategic approach to AI research and development. Dakota State University (DSU), particularly through its 17 Madison Cyber Labs (MadLabs®), offers valuable insights and models that can inform national strategies. As one of the nation's leading universities for AI, DSU's focus on AI applications in cybersecurity, privacy, edge computing, and research that aligns with national priorities and presents scalable models for broader implementation.

Below, please find efforts spearheaded by DSU that can inform how the previous administration's National Artificial Intelligence Research and Development Strategic Plan (2023 Update) can be rewritten so that the United States can secure its position as the unrivaled world leader in artificial intelligence.

Strengthening AI Research in Cybersecurity and Privacy
DSU's AI Lab emphasizes the application of AI in enhancing security and privacy, a critical need for national security efforts.

- Machine Learning for Anomaly Detection: Developing algorithms to identify unusual patterns that may indicate security breaches.
- Privacy-Preserving Machine Learning: Creating models that protect individual data privacy while enabling robust analytics.

These initiatives demonstrate the critical role of AI in fortifying cybersecurity measures. The national strategy should prioritize funding and support for similar research endeavors that aim to integrate AI into cybersecurity frameworks.

Advancing Trustworthy and Robust AI Systems
The AI Lab at DSU is actively researching ways to understand how AI systems can be taken advantage of by adversarial threats and steps to prevent these threats.

- AI Adversarial Offense and Defense: Studying how AI systems can be both attacked and protected against malicious inputs.
- Countermeasure Examples in Machine Learning: Developing strategies to mitigate vulnerabilities in AI models.

Incorporating such research into the national plan will ensure the development of AI technologies that are secure and reliable. While AI can improve lives and everyday function, it can also cause harm. Understanding what that harm can look like is essential to a national AI strategy.

Investing in Workforce Development and Education

DSU's initiatives in education and professional development include efforts that are leading toward one of the nation's first Ph.D. programs in AI, as well as professional development for educators and students.

- PH.D. in AI: The program will emphasize both theoretical and practical aspects of AI, computer science, data science, preparing graduates for careers in academia, industry, and research institutions. For the United States to truly lead in AI development, our technology leaders must be well versed in all aspects of AI and its continued development.
- Governors Cyber Academy: Offering cyber education curriculum and training for K-12 educators and students to increase awareness of cybersecurity and ethical behavior as it relates to AI, to accelerate students into degree programs in AI, cybersecurity, and computer science.

By investing in educational programs that build AI literacy, knowledge skills for K-12, college students, and educators, the AI national strategy will ensure a pipeline of skilled professionals is equipped to advance AI technologies.

Encouraging Collaborative and Interdisciplinary Research

DSU's MadLabs® foster interdisciplinary collaboration across various labs that promote cross-pollination of best practices and forward thinking that will accelerate innovation.

- DSU PATRIOT Lab: Focusing on protecting critical cyberinfrastructures through applied research in IoT and cyber-physical systems.
- DSU Success Lab: Providing project-based experiences for students in software development and emerging technologies.

The national AI strategy must promote interdisciplinary research centers that bring together experts from diverse fields to tackle complex AI challenges. A collaborative environment

that promotes experts to free think will allow the United States to find new ways to leverage AI to benefit American ingenuity.