

# PUBLIC SUBMISSION

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**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-0202  
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## Submitter Information

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## General Comment

See attached file(s)

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## Attachments

Samuel\_Public\_Comment\_AI\_2025\_v7-SSN

5/28/2025

**RE: Public Comment for the Select Committee on Artificial Intelligence of the National Science and Technology Council's "*National Artificial Intelligence Research and Development Strategic Plan*", with Relevance to the National AI Initiative Office (NAIO)**

**Dear AI Committee and Council Members,**

Thank you for the opportunity to comment on the National Artificial Intelligence (AI) Research and Development Strategic Plan. Thank you for your work and contributions to this critical domain.

I am a professor at Rutgers University, teaching Artificial Intelligence Strategy and Natural Language Processing (NLP) Studios. I am also the Editor in Chief of the Journal of Big Data and Artificial Intelligence (JBDAI), Chair of Rethinking AI for Shared Empowerment (RAISE) research initiative and Executive Director of the Informatics Program at Bloustein School, Rutgers University. Additionally, I lead numerous research and advisory initiatives on AI innovation, AI strategy and the socioeconomic impacts of AI.

Given the critical long-term importance of AI, I present a few brief comments for your consideration:

1. **Prioritize humans and societal wellbeing through a human-enhancive approach.** There is a critical need to go beyond 'human in the loop' and 'human centered' AI, which are useful but are relatively passive and limited to focusing on human involvement and human positioning respectively. In contrast, a human-enhancive approach goes further, emphasizing proactive alignment with human values, support for human needs and elevation of human performance in the development and deployment of AI applications and systems. This approach is critical to ensure that we develop ecosystems that promote human-sensitive AI systems and can tackle social challenges such as AI phobia and resistance to AI technologies. **Human enhancive AI principles can be used to create AI ecosystems that elevate the human identity**, maximize human intelligence potential and are adaptive to individuals' intellectual, cognitive and social contexts (adaptive cognitive fit), not just in terms of performance, but also in personalized areas such as cultural subjectivity [1, 3, 5].
2. **Employ a new approach to AI education.** Our current approach to AI education focuses on teaching coding, AI technology applications, and human-AI interaction topics such as AI ethics. However, the foundational ontological components of the nature and constitution of AI are missing. In other words, our current AI education systems are enabling the learning of a broad range of AI application tactics but, apparently, fails to **teach AI strategy, the integrative principles of AI and the boundaries of AI**. AI education is too critical to be assumed to be a solved challenge - We need to initiate a rethinking of AI education-for-all with a long-term perspective, or else we will fall behind others who do this effectively [4].
3. **Transparency.** We have strict rules for the declaration of the ingredients that go into simple products such as candy, and for more sophisticated products such as pharmaceuticals. However, we have failed to ensure that AI applications such as ChatGPT declare all data 'ingredients' - we

are allowing a blinded mass consumption of high-impact black-box technologies, and this is not a human-centered or people-friendly approach. The NAIIO and initiatives such as NSF's NAIRR need to promote policy development that **rewards full data transparency in AI systems** and restricts and disincentivizes partial or full black-box AI systems [2, 6].

4. **Create unconventional opportunities.** The current approach for the distribution of AI resources and opportunities does not ensure a balanced distribution of funds to all stakeholders. At face value, it appears that the current efforts provision more resources for those who already have a lot of resources, such as established research centers and traditional channels within academia. While academia is a critical component and needs to be a recipient of vital funding, the distribution strategies for these resources need to be revised. Academia must be supported and required to **partner with stakeholders from diverse and even non-traditional domains** such as **industry, farmers, blue collar workers and not-for-profits - not just as 'subjects' but as collaborators and recipients of shared resources**. We need a broader set of recipients and creative strategies for broader stakeholder participation in AI innovation. This will help avoid a skewed AI-resources distribution driven **digital-divide-on-steroids** scenario [4].
5. **Utilize an integrative approach when investing in AI.** In the case of investments into AI, we must acknowledge that *the whole may be greater than the unintegrated sum of its parts*. While it is impractical and counter-productive to consider a monolithic integration of efforts, coordinated action is necessary. Initiatives must be launched to avoid redundancy and duplication of efforts, especially when using taxpayer-funded resources, and to ensure that critical gaps are not overlooked. An approach that expects to fund diverse disconnected projects and expects optimal integrative benefits to automatically and magically emerge over time is doomed to fail. We need to create a **dynamic and evolving map of an AI super-ecosystem with a global perspective**, and then allow this to serve as a form of strategic guidance for investments into AI. I believe that we have a responsibility to approach the development of AI wisely, with integrative perspectives, mega-collaborative approaches, and collective responsibility to ensure the best possible outcomes with revolutionary AI technologies.

We must collectively make every effort to avoid a dystopian future with AI. I look forward to our collaborative efforts in the adoption of features from a utopian vision for a human society, where AI benefits humanity - all of it and not just a select few.

Sincerely,

*Prof. J S*

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Chair, RAISE; Editor in Chief, Journal of Big Data and Artificial Intelligence (JBDAI) (ISSN 2692-7977)

## Key references & links:

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3. Samuel, Y., Brennan-Tonetta, M., Samuel, J., Kashyap, R., Kumar, V., Krishna Kaashyap, S., ... & Jain, P. (2023). Cultivation of Human Centered Artificial Intelligence: culturally adaptive thinking in education (CATE) for AI. *Frontiers in Artificial Intelligence*, 6, 1198180.
4. Samuel, J. (2021). A call for proactive policies for informatics and artificial intelligence technologies. *Scholars Strategy Network*.
5. Samuel, J., Khanna, T., & Sundar, S. (2024). Fear of artificial intelligence? NLP, ML and LLMs based discovery of AI-phobia and fear sentiment propagation by AI news.
6. NAIRR: <https://www.nsf.gov/focus-areas/artificial-intelligence/nairr>
7. Kashyap, R., Samuel, Y., Friedman, L. W., & Samuel, J. (2024). Artificial intelligence education & governance-human enhance, culturally sensitive and personally adaptive HAI. *Frontiers in Artificial Intelligence*, 7, 1443386.
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9. Tripathi, A., Samuel, J., Brennan-Tonetta, M., Nguyen, H., & Mema, E. (2025). When Machines Create! Envisioning Our Future with the Transformative Power of Generative AI. *Journal of Big Data and Artificial Intelligence*, 3(1).