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Submitter Information

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General Comment

Please see attached the response "Strategic Federal Priorities for Sustaining U.S. Leadership in Artificial Intelligence: Embodied AI, Supercomputing, and Data Access".

Best regards,
Ivan Ruchkin
University of Florida

Attachments

RFI AI

Strategic Federal Priorities for Sustaining U.S. Leadership in Artificial Intelligence: Embodied AI, Supercomputing, and Data Access

Submitted in Response to:

Request for Information (RFI) on the National Artificial Intelligence Research and Development Strategic Plan Update

Submitted by: Ivan Ruchkin, Assistant Professor in Electrical and Computer Engineering

Affiliation: University of Florida

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Executive Summary

To secure the United States' position as the unrivaled global leader in artificial intelligence, the federal government must prioritize strategic investments in areas where its leadership is essential and where private sector incentives are insufficient. This white paper proposes three high-impact, federally driven priorities for the next 3–5 years:

1. **Accelerate Embodied AI Research and Deployment**
2. **Expand Equitable Access to Supercomputing Infrastructure for AI**
3. **Enable Responsible Access to Government-Owned Data-Generation Platforms**

These priorities directly support the goals of the National AI R&D Strategic Plan by advancing innovation, strengthening national security, and promoting inclusive scientific progress.

Embodied AI: Unlocking AI's Physical Potential

Challenge

Despite rapid progress in digital AI, the development of AI systems capable of interacting with and operating in the physical world—**embodied AI**—remains underdeveloped. This gap limits the deployment of AI in critical sectors such as defense, manufacturing, logistics, and healthcare.

Federal Role

The federal government is uniquely positioned to:

- Fund high-risk, high-reward research in embodied AI.
- Coordinate cross-agency efforts to develop testbeds and standards.
- Support long-term foundational research not immediately profitable for industry.

Recommendations

- Expand funding for NSF's **Cyber-Physical Systems (CPS)** and **Foundational Research in Robotics (FRR)** programs.
- Increase DoD investment through **AFOSR/AFRL**, **ONR**, and **ARO/ARL** in embodied AI for national security.
- Launch a **National Embodied AI Initiative** to unify and scale efforts across agencies.

Supercomputing Infrastructure for AI: Democratizing Access

Challenge

AI research is increasingly constrained by limited access to high-performance computing (HPC), particularly GPUs. This creates inequities across institutions and slows innovation.

Federal Role

The federal government can:

- Provide shared, scalable HPC resources to academic and nonprofit researchers.
- Reduce barriers to entry for under-resourced institutions.
- Ensure U.S. leadership in AI hardware and infrastructure.

Recommendations

- Expand and decentralize programs like the **NSF NAIRR Pilot** to create a **National AI Supercomputing Grid**.
- Lower administrative and technical barriers for university access.
- Invest in domestic AI chip manufacturing to reduce supply chain vulnerabilities.

Access to Government-Owned Data-Generation Platforms

Challenge

The U.S. government operates high-fidelity simulators (e.g., for aircraft, robotics, and autonomous systems), but access for academic and industrial researchers is often restricted, limiting their utility for basic research.

Federal Role

The government can:

- Enable responsible, secure access to these platforms.
- Promote open science while safeguarding sensitive technologies.
- Catalyze innovation in embodied AI and simulation-based training.

Recommendations

- Establish **special access programs** for unclassified simulators with reduced restrictions on publication and derivative works.
- Standardize access protocols across agencies.
- Incentivize collaborative research that leverages these platforms for public benefit.

Conclusion

To maintain its global leadership in AI, the United States must act decisively in areas where federal leadership is indispensable. By investing in embodied AI, democratizing access to supercomputing, and unlocking government-owned data platforms, the federal government can accelerate innovation, enhance national security, and ensure that AI advances serve the public good.