# PUBLIC SUBMISSION

**Received:** May 29, 2025
**Tracking No.** mb9-sjcj-uxxw
**Comments Due:** May 28, 2025 **Submission Type:** Web

**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-0246
Comment on FR Doc # 2025-07332

## Submitter Information

**Organization:** Alliance for Automotive Innovation

## General Comment

Alliance for Automotive Innovation Comments on National AI R&D Strategic Plan RFI 5-29-2025

## Attachments

Auto Innovators Comments on National AI R and D Strategic Plan RFI 5-29-2025

May 29, 2025

Faisal D'Souza
Technical Coordinator
NITRD National Coordination Office
2415 Eisenhower Avenue
Alexandria, Virginia 22314

**RE: Request for Information on the Development of a 2025 National Artificial Intelligence ("AI") Research and Development (R&D) Strategic Plan (Docket ID No. NSF-2025-OGC-0001)**

Dear Mr. D'Souza:

Alliance for Automotive Innovation ("Auto Innovators") is pleased to submit comments to the Office of Science and Technology Policy ("OSTP") in response to its request for information on the development of a National Artificial Intelligence ("AI") Research and Development ("R&D") Strategic Plan. Auto Innovators appreciates the Administration's continued engagement with stakeholders regarding how best to position the United States as the world leader in artificial intelligence through strategic R&D investment in this critical and emerging technology.[1]

Auto Innovators represents the full automotive industry, including the manufacturers producing most vehicles sold in the U.S., equipment suppliers, battery producers, semiconductor makers, technology companies, and autonomous vehicle developers. Our mission is to work with policymakers to realize a cleaner, safer, and smarter transportation future and to ensure a healthy and competitive auto industry that supports U.S. economic and national security. Representing approximately 5 percent of the country's GDP, responsible for supporting 10 million jobs, and driving $1.2 trillion in annual economic activity, the automotive industry is the nation's largest manufacturing sector.

Artificial intelligence facilitates the ability of the U.S. automotive industry to integrate driver support features, advanced safety technologies, and automated driving systems into consumer vehicles. This technology helps automotive companies improve roadway safety, increase the mobility of people and goods, reduce traffic incidents, and protect road users. It can also support automotive companies with their design engineering, manufacturing, and supply chain management operations. Federal government investment in artificial intelligence research and development remains vital to improving safety and mobility on American roads and maintaining the country's technological leadership in this space.

---

[1] This document is approved for public dissemination. The document contains no business-proprietary or confidential information. Document contents may be reused by the government in developing the 2025 National AI R&D Strategic Plan and associated documents without attribution.

Auto Innovators makes the following recommendations to OSTP as it identifies Federal strategic priorities for artificial intelligence research and development:

- **Safety Validation Research:** Safety-critical autonomous systems, including automated vehicles, involve software and physical systems interacting over time. Validating the safety of automated vehicles can be challenging because of difficulties in modeling complex roadway environments and the need to evaluate the vehicles and actors in the environment (*e.g.*, vulnerable road users). The Strategic Plan should prioritize research on how to leverage artificial intelligence in advanced validation techniques that can scale to the complexity of automated vehicles and other next-generation safety-critical autonomous systems.

- **PNT Resilience:** Positioning, navigation, and timing ("PNT") data provided by the U.S. Global Positioning System ("GPS") and other Global Navigation Satellite Systems ("GNSS") signals support various vehicle features and functionality ranging from consumer information to active safety to automated driving. Addressing human interventions like jamming and spoofing is critical to ensuring the resiliency of PNT, as well as continued access to PNT-enabled vehicle features and functions. Artificial intelligence and machine learning can be used to analyze the threat environment, detect any threats to GPS and GNSS signals, and deploy algorithms to update known threats and improve subsequent scans of the environment. The Strategic Plan should seek to optimize research in this area to better protect embedded systems in vehicles and critical infrastructure that rely on PNT.

- **Infrastructure System Improvement:** Artificial intelligence applications can improve the nation's surface transportation infrastructure, by processing and translating data from sensors and vehicle operating environments to assist with design, construction, maintenance, and operation processes for infrastructure systems. Smarter information and better sensing can enable Federal agencies and state transportation authorities to monitor infrastructure asset performance and prepare roadway infrastructure for advanced vehicle technologies. The Strategic Plan should include research on artificial intelligence use in computer vision, risk prediction, and method validation for proactive roadway infrastructure management.

- **Vulnerable Road User Safety:** Artificial intelligence applications can assist with vulnerable road user safety. Digital twins leveraging camera or LiDAR sensors embedded in roadway infrastructure could be used to accurately detect the position of vehicles and vulnerable road users to extract trajectory information, while artificial intelligence-based distance prediction models can use historical data to predict trajectories to mitigate risk of a traffic incident. Simulation results can feed into the safety application that interfaces with the physical environment to provide messages to drivers, vulnerable road users, and/or roadway message boards to avoid traffic incidents. The Strategic Plan should focus on developing and applying digital twin technology, as well as how to standardize digital twin output.

- **Standards Development:** The development of voluntary standards and guidelines is important to increasing the adoption of artificial intelligence technologies. Public and private sector collaboration would ensure that such standards do not result in barriers to innovation by U.S. companies that develop and deploy artificial intelligence. Foundational research on the configuration of human-artificial intelligence interaction for effective decision-making and

operations will be important for the training, testing, and evaluation of safety-critical autonomous systems. The Strategic Plan should task the National Institute of Standards and Technology to engage industry and other stakeholders on this important topic.

- **Data Aggregation and Analysis:** High-quality transportation data is necessary to leveraging artificial intelligence in transportation. Such data comes from various sources including infrastructure owners and operators, automotive companies, and personal mobile devices. However, concerns about privacy, security, data heterogeneity, and data quality can discourage this data sharing. The Strategic Plan should incorporate research on federated learning models to account for the velocity, volume, and variety of transportation-generated data and to improve accuracy and robustness in the real-time collection, processing, and analysis of such data for better efficiency and responsiveness in transportation systems.

*****

Auto Innovators appreciates being able to share the perspective of the U.S. automotive industry on the important issue of identifying strategic priorities for artificial intelligence research and development. We look forward to continued engagement with OSTP as it develops the 2025 National AI R&D Strategic Plan.

Sincerely,

Tara Hairston
Senior Director, Technology Policy