ITS America
AI Policy Principles

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ITS America AI Policy Principles

Artificial intelligence (AI) is poised to radically transform the capabilities of transportation planners and operators to utilize data to proactively enhance safety, efficiency, equity, resiliency, and sustainability. The Intelligent Transportation Society of America (ITS America) has developed AI Policy Principles to help guide the regulation, development, and deployment of AI technologies and applications in our transportation system so that these new tools are used safely, transparently, and effectively in ways that provide net benefits to people and their communities and to build trust in these technologies to scale their adoption nationwide.

AI is not a stand-alone or a replacement for existing transportation technologies. Instead, it is an enhancement and a tool to improve all transportation modalities, provide workforce development opportunities, maintain and grow US global competitiveness, and importantly, save lives. These Principles serve as a recommended approach for policymakers, developers, and deployers in our industry to successfully realize the potential of AI to deliver transformative safety, equity, and resiliency and sustainability outcomes.

The AI Policy Principles are focused on three key themes: (1) establishing trust and transparency in AI, (2) encouraging a human-centric approach to AI deployment, and (3) identifying tangible outcomes from AI applications. The Principles address a range of issues including: transparency and explainability, data privacy, security, accountability and governance, equity, safety, and resiliency and sustainability. Each high-level principle can be found in the Overview section, with more detail provided later in the document. ITS America also developed a companion document, *AI Decoded*, which is designed to provide an accessible introduction to artificial intelligence technology, its capabilities, and how it is being deployed in the transportation system today.

Both of these documents can be accessed at the ITS America website – www.itsa.org.

AI Policy Principles – An Overview

Trust and Transparency

1. Transparent and Explainable Applications

    1.1. ITS America supports developing transparency guidelines for the use of AI applications in transportation and recommends the U.S. Department of Transportation (USDOT) develop these transparency guidelines in coordination with the industry.

    1.2. ITS America supports developing standards of explainability for the use of AI applications in transportation and recommends USDOT create explainability best practices.

2. Data Privacy

    2.1. ITS America supports a modern national data privacy law and urges Congress to pass legislation to establish such a privacy law.

    2.2. ITS America supports evaluating data privacy and security needs in relation to where and how data is stored and processed.

3. Security

    3.1. ITS America supports the prioritization of a secure AI ecosystem, where cybersecurity and valuable data is secure, and measures are taken to improve resiliency against cyberattacks. All levels of government and industry should adhere to the most recent NIST standards, currently the AI Risk Management Framework and Cybersecurity 2.0 Framework, when deploying AI solutions.

4. Accountability

    4.1. ITS America supports the adoption of concrete guidelines for assessment and ongoing evaluation of the risks and impacts of operating AI systems, including under the NIST Assessing Risks and Impacts of AI Program, and holding developers and operators of AI systems accountable for the risks and impacts associated with their systems.

    4.2. ITS America urges the Federal government to define a clear governance structure, including roles, responsibilities, and goals, to promote AI accountability at the Federal agency level.

Human-Centric AI Use

5. Equitable and Representative Data Inputs

   5.1. ITS America supports the gathering and use of high-quality, representative real-time and historical transportation data. ITS America encourages the use of digital infrastructure solutions to gather data that is accurate, relevant, reliable, and complete.

   5.2. ITS America urges USDOT to prioritize research in AI equity, reliability, and dataset biases. The Department should work with a diverse set of industry, academic, non-profit, and public sector stakeholders to improve AI models and datasets to produce information that accurately and equitably reflects the full spectrum of transportation-related users and needs.

6. Workforce

   6.1. ITS America recommends that USDOT, in coordination with Federal agencies such as the Department of Labor, develop a robust workforce development plan and assistance program to ensure our transportation workforce is prepared to leverage AI tools and solutions.

7. Tangible Benefits

   7.1. ITS America supports USDOT exploring ways to make AI advancements accessible to human users/operators, so that those utilizing these systems may better understand and effectively leverage and incorporate AI to provide benefits to communities across the country. We recommend that AI applications be deployed to accomplish specific and tangible outcomes.

Outcomes

8. Safety

   8.1. ITS America supports the development and deployment of AI applications in transportation that improve safety outcomes for all road users. We recommend that USDOT incorporate AI systems into its five-year strategic plan and prioritize safety as an outcome in its AI research and grant initiatives.

9. Equity

   9.1. ITS America supports the use of transportation-related AI tools and solutions to achieve equity in mobility and communities. We recommend that USDOT prioritize using AI to realize equitable outcomes for all end users.

10. Resiliency and Sustainability

    10.1. ITS America urges USDOT to include AI in an update to its sustainability plan, as well as its impacts on sustainability goals in five-year strategic plans going forward.

    10.2. ITS America supports research and development of deployment best practices from USDOT and other Federal agencies on the capability of AI to enhance infrastructure resiliency and to study the impact of transportation-related AI on the climate.

AI Policy Principles – In Detail

Trust and Transparency

1. Transparent and Explainable Applications

   1.1. **ITS America supports developing transparency guidelines for the use of AI applications in transportation and recommends the U.S. Department of Transportation (USDOT) develop these transparency guidelines in coordination with the industry.** Without transparency, advanced AI can be susceptible to bias and unethical uses and reduce public trust. Establishing a level of transparency in data collection, algorithms, and how AI applications are used will help ensure trust among users. Transparency encourages responsibility, decreases the risk of misuse, and will ultimately lead to better tools and better results for transportation users. USDOT and other Federal stakeholders should develop robust reporting requirements for any harmful incidents associated with AI utilization. The industry will benefit from transparency guidelines such as adherence to regulations and documentation on model limitations and capabilities.

   1.2. **ITS America supports developing standards of explainability for the use of AI applications in transportation and recommends USDOT create explainability best practices.** ITS America supports AI applications in transportation that are explainable to the public and all end users, regardless of technical expertise. This may ease adoption and support for new technologies and innovation potentially applied to infrastructure, transportation modes, and more.

2. Data Privacy

   2.1. **ITS America supports a modern national data privacy law and urges Congress to pass legislation to establish such a privacy law.** While some U.S. states have adopted their own standards, a patchwork of laws makes it difficult for businesses to develop and deploy AI applications safely and transparently. As AI technologies continue to evolve and spread across a variety of industries and geographies, a comprehensive, national standard should be enacted. Data privacy protections ensure that the public's information is not being collected without consent. Without this, adoption and public acceptance of AI applications in transportation will be hindered.

2.2. **ITS America supports evaluating data privacy and security needs in relation to where and how data is stored and processed.** Federal regulators should evaluate whether any geographic location or other requirements should be considered for the storage and processing of data collected domestically and used in AI systems.

3. Security

3.1. **ITS America supports the prioritization of a secure AI ecosystem, where cybersecurity and valuable data is secure, and measures are taken to improve resiliency against cyberattacks. All levels of government and industry should adhere to the most recent NIST standards, currently the AI Risk Management Framework and Cybersecurity 2.0 Framework, when deploying AI solutions.** All levels of government and industry should adhere to NIST standards including the AI Risk Management Framework, Cybersecurity 2.0 Framework. AI- related transportation assets rely on various interconnected systems, such as sensors, communications methods, and data processing systems. This greater degree of connectivity can create additional opportunities for hostile actors to access critical transportation infrastructure, threatening to cause significant disruption to the traveling public. It is crucial to further identify potential vulnerabilities in AI-equipped transportation infrastructure and develop additional comprehensive techniques capable of detecting unauthorized incursions. Further, ITS America recommends that policymakers dedicate additional support for building greater professional cybersecurity capacity within the transportation sector, in order that transportation agencies have a sufficient workforce capable of preventing and responding to cybersecurity incidents. Finally, cybersecurity considerations should remain a top priority during the design, development, and deployment of AI tools. To accomplish this, robust cybersecurity measures should be incentivized through the procurement process by transportation practitioners in the market for AI solutions.

4. Accountability

4.1. **ITS America supports the adoption of concrete guidelines for assessment and ongoing evaluation of the risks and impacts of operating AI systems, including under the NIST Assessing Risks and Impacts of AI Program, and holding developers and operators of AI systems accountable for the risks and impacts associated with their systems.** Developers and operators of AI systems should be accountable for the performance of their technology, particularly when such technologies are as vital as keeping people safe on roads (including vulnerable road users such as pedestrians, bicyclists, those with disabilities, etc.). Safety is paramount to the deployment of AI, so research and resources should focus on AI interpretations, monitoring, and deployment evaluation to gauge the safety of such applications to the public. Risk assessments on safety implications of AI solutions within transport operations need to be done by design by

developers, product

and solution providers, and by any agency that incorporates AI tools into their system. This is a critical aspect – accountability must be proactive, rather than reactive. Oversight and enforcement strategies must also be incorporated.

4.2. **ITS America urges the Federal government to define a clear governance structure, including roles, responsibilities, and goals, to promote AI accountability at the Federal agency level.** To deploy AI tools responsibly themselves and help the private sector accelerate the use of AI, Federal agencies should continue to refine and implement an accountability framework in their governance structures. Accountability frameworks from USDOT and related agencies will ensure that there is a standard set across the transportation industry and that the U.S. leads in the global deployment and innovation of AI technologies in mobility.

Human-Centric AI Use

5. Equitable and Representative Data Inputs

5.1. **ITS America supports the gathering and use of high-quality, representative real-time and historical transportation data. ITS America encourages the use of digital infrastructure solutions to gather data that is accurate, relevant, reliable, and complete.** By building powerful AI models that utilize techniques such as machine learning, deep learning, or neural networks, transportation planners and operators can make more informed decisions and identify optimal routes, traffic management strategies, addressing the needs of vulnerable road users and public transportation schedule adjustments, among other use cases. It is vital that these models rely on quality, reliable, and trustworthy data that is continually updated and refined to adjust to changing transportation dynamics, including on transportation patterns, public transportation usage, and commuting behavior. These data standards apply to data gathered by both the public and private sector, and suppliers of data must be able to demonstrate that their datasets were gathered from a diverse set of inputs.

5.2. **ITS America urges USDOT to prioritize research in AI equity, reliability, and dataset biases. The Department should work with a diverse set of industry, academic, non-profit, and public sector stakeholders to improve AI models and datasets to produce information that accurately and equitably reflects the full spectrum of transportation-related users and needs.** AI learns from the data it is given. A training data set with gaps in it, for example, could therefore lead to biased output. We believe that without diverse data sources, AI systems could make conclusions that perpetuate biases and inequities. We must have transparency as to what datasets are being used to train an AI system, as well as a clear, balanced approach to deciding what data

should be utilized. Transportation networks

are critical to users from all socioeconomic statuses and geographical regions, so it is imperative that AI-powered transportation systems produce results that are as accurate and representative as possible.

6. Workforce

6.1. **ITS America recommends that USDOT, in coordination with Federal agencies such as the Department of Labor, develop a robust workforce development plan and assistance program to ensure our transportation workforce is prepared to leverage AI tools and solutions.** AI will impact our transportation workforce and USDOT should establish a robust workforce development plan that supports the needs of the existing workforce while encouraging training programs for our future workforce needs. This includes training the existing workforce on how to leverage AI tools and solutions to support their own work, in addition to AI's capabilities and limitations. AI should be used for decision support and augmentation of tasks, not as a replacement. For future workforce needs, it is critical that USDOT support the development of AI training curriculum related to transportation at universities and technical schools and should prioritize AI as a key component of the University Transportation Centers program. Civil engineering programs should be updated to include a focus on technology and digital infrastructure, in addition to hard infrastructure.

7. Tangible Benefits

7.1. **ITS America supports USDOT exploring ways to make AI advancements accessible to human users/operators, so that those utilizing these systems may better understand and effectively leverage and incorporate AI to provide benefits to communities across the country. We recommend that AI applications be deployed to accomplish specific and tangible outcomes.** AI transportation tools should be human-centric and focused on the needs of individuals, groups, and society. ITS America supports the development of AI- powered transportation tools that focus on the end-user, and which amplify and augment and complement human abilities, rather than displace. Human-focused AI should be at the core of future intelligent transportation systems. Data-driven AI solutions are here, but there may be challenges associated with applying them to operational environments. Additionally, outreach and education are important to building trust in this technology. USDOT should work to identify challenges and education needs in the public and private sector, and among transportation users. ARPA-I could lead these research efforts within USDOT given its mandate to explore advanced transportation technologies.

Outcomes

8. Safety

   8.1. **ITS America supports the development and deployment of AI applications in transportation that improve safety outcomes for all road users. We recommend that USDOT incorporate AI systems into its five-year strategic plan and prioritize safety as an outcome in its AI research and grant initiatives.** Improving safety across the transportation network is crucial. With more than 40,000 fatalities on U.S. roadways each year, there is significant potential for AI to fundamentally improve safety outcomes, making meaningful progress towards a world without transportation fatalities. Concurrently, AI should not be used in a way that makes roads less safe, and all precautions should be taken to ensure there are no unintended consequences associated with AI deployment.

9. Equity

   9.1. **ITS America supports the use of transportation-related AI tools and solutions to achieve equity in mobility and communities. We recommend that USDOT prioritize using AI to realize equitable outcomes for all end users.** AI has tremendous potential to bridge equity gaps throughout communities in the U.S., but with such technologies come risks of improper use and unintended consequences. It is imperative that AI's uses in transportation consider the effects on equity of all kinds, including but not limited to racial, gender, geographic, and socioeconomic outcomes and for all users, including but not limited to pedestrians, bicyclists, public transit, personal vehicles, and new mobility options. USDOT should continue to keep equity as a central pillar of its work going forward, with even more emphasis towards AI and its impacts.

10. Resiliency and Sustainability

   10.1. **ITS America urges USDOT to include AI in an update to its sustainability plan, as well as its impacts on sustainability goals in five-year strategic plans going forward.** Through the utilization of AI's abilities to process and interpret large amounts of data, transportation systems can potentially be optimized to reduce traffic congestion, decrease fuel consumption, and minimize environmental impacts. Support from government agencies (Federal, state, local, and tribal) for AI in transportation sustainability plans will continue to ensure future resiliency of transportation systems, allowing a faster and more efficient response to the impacts of a changing climate. AI can, for example, assist with measuring the impacts of heavier vehicles and increased trips on our roadways, planning for more resilient and efficient EV charging, and predicting associated impacts on the electrical grid.

10.2. **ITS America supports research and development of deployment best practices from USDOT and other Federal agencies on the capability of AI to enhance infrastructure resiliency and to study the impact of transportation-related AI on the climate.** USDOT should conduct research to identify ways in which AI systems can serve as a resource to improve the transportation system's resilience to climate disasters by providing advanced data analytics and predictive modeling to better anticipate and respond to extreme weather events. AI training and system use may also have an impact on our climate and infrastructure resiliency, as large computing models may require great amounts of energy and electricity, affecting our electrical grids and energy resource supply. USDOT and other Federal agencies should conduct research on the impact of AI modeling and compute on the climate and the resiliency of our infrastructure.