

October 30, 2025 Roundtable

Discussion Topic: AI



Discussion Summary

Several organizations feel behind in AI adoption but are experimenting with generative tools to create preliminary design concepts, assist with project discussions, and support decision-making and prioritization. Some foresee challenges ensuring AI follows required rules and regulations. Adoption is happening, but it is slow and there is a lack of trust.

State-level transportation staff are using AI for governance, writing specifications, proposals, and managing vehicle and equipment data, including determining fleet replacement needs. They have an AI Task Force, an AI literacy program, and must consider strict data security requirements. Leadership is supportive of expanded AI use.

Engineering and consulting groups aim to automate repetitive tasks and improve efficiency. Many employees already use AI, though policies and guardrails are still limited. Some firms use internal data systems to support proposal creation, along with generative AI for writing. Others use AI for proposal development, see potential for AI-assisted design, and are exploring ways to safely incorporate proprietary information.

Construction groups use generative AI for administrative tasks, document preparation, and claims processing, and deploy camera systems in trucks to detect fatigue and safety violations.

Industry associations note their members' hesitation due to work with government and proprietary data but use AI to streamline writing tasks. Some organizations hire consultants to analyze workflows and identify automation opportunities, though the services are expensive.

In academia, researchers apply AI to support decision-making, equity-focused facility planning, optimization problems, virtual first responder training, DOT-style permit drawing generation, and safety research using video analytics. Others develop AI tools for transportation operations, mobility simulations, and autonomous vehicle research. Work includes AI-based pattern recognition in infrastructure, cyber-physical communication systems, and structural control against seismic loads. Many emphasize the importance of large datasets and balancing computing resource needs. Several faculty are developing new AI-related academic programs based on industry input.

AI programs and tools mentioned: ChatGPT, Microsoft Copilot, Able AI, Open Asset, Notebook Ellum, TENNA, Joyce, Jostle

Future Collaboration Opportunities

There are opportunities at the university for students to work on projects at zero to low-cost for the organization, such as for a capstone project in the School of Computing or Raikes School, or for specialized graduate and undergraduate classes.

AI Tool Ideas:

- When specifications for a project come in, the AI knows the supply that is available and analyzes what materials can be substituted with what they do have in supply
- A profilometer travels down the road to collect pavement info and cameras capture the surrounding area. Can these collect other information that is typically collected by highway workers? This would improve safety and man-power efficiency.
 - Possibly using LiDAR, or a combination of LiDAR and ArcGIS
- Texas is utilizing UPS and FedEx by putting data collecting equipment on their vehicles. Is that something that can happen here?
 - Data is used forensically before and after accidents and brought up in court cases

Specific Notes from Individuals

Industry

Paul Barnes, Lincoln MPO

- Feels Lincoln MPO is behind in adoption.
- Currently uses some ChatGPT to draw up projects, i.e., a parking garage design to use in initial discussions.
- Foresees challenges in making sure a model would follow all the rules and planning regulations.
- Sees a particular use for making decisions and prioritizing lists and projects, as well as shaking out scenarios.

Lou Anne Daugherty, NDOT

- She is the Chief Data Officer and point of contact for AI at NDOT
- Current uses of AI:
 - Program containing policies and governance
 - Collecting use cases
 - To have a consistent voice when writing specs
 - Proposal writing
 - Collecting public vehicle data and locating vehicles and equipment
 - Determining which fleets need replaced
- AI Programs Used:
 - Able AI
 - Some Microsoft Copilot; recognizes it's limited to Microsoft 365
- NDOT has an AI Task Force to form guidelines and limitations surrounding AI for their employees; They also have an AI literacy program for employees who are unfamiliar with AI
- When thinking of using AI, they need to keep in mind the level of security needed for NDOT data
- The NDOT Director is on board for using AI

Mark Meisinger, Felsburg Holt & Ullevig, ACEC Board Member

- FHU wants to use AI to automate the tasks no one wants to do and save time by automating the menial tasks
- They recognized there should be policies and guardrails for employees
 - Most employees were already using AI
 - Made some guidelines but not much
- Use Open Asset to feed proposals and proprietary info to create a database

- Use ChatGPT or Microsoft Copilot to help with writing reports and cover letters

Tony Potthoff, Constructors Inc.

- Current uses of AI:
 - ChatGPT and Notebook Ellum for administrative tasks such as processing claims and creating documents
 - TENNA cameras in CDL truck cabs to identify drivers falling asleep, not wearing seatbelts, etc.

Shane Swope, Schemmer, ACEC Board Member

- Uses AI for proposal writing in the Joyce and Jostle programs
- Can see using AI in the future for designs and cookie-cutter pre-designs
- Needs to work out how to use AI for proprietary information

Katie Wilson, AGC Nebraska

- Members haven't been pushing for AI
- Timid to use AI because they work with government with proprietary information
- Use AI to save time on administrative tasks such as writing
- Work with a consulting business to help their members incorporate more AI
- Katie went to the Agency of America conference where they were offering AI services
 - Someone comes and does a walkthrough of the workplaces to see processes and what can be automated with AI, pulls data, and does reporting
 - The service was pricy—could UNL provide a similar service for less?

UNL Faculty

Hau Chan, School of Computing

- Uses AI to address societal problems to inform decision making
 - Determining where to locate facilities by taking community needs and preferences into account
 - Considering Disadvantaged Communities
- Has a current project creating a solution algorithm to solve optimization problems using open AI

Nathan Huynh, Civil & Environmental Engineering

- Has a project to develop an AI chatbot to use in a virtual, extended reality First Responder training on EVs. The bot is fed specific data from sources determined by the project team
- Can see using AI at the DOT to create permit drawings following their specific formats
- Working with Lou Anne at NDOT on a proposal to develop programs using AI

Aemal Khattak, Civil & Environmental Engineering

- Director of the Mid-America Transportation Center
- Research focuses on safety, particularly for highways, intersections, roundabouts, and rail crossings
- Uses AI for literature reviews and proposal writing
- Sometimes collects data using AI by searching videos for particular information

Wissam Kontar, Civil & Environmental Engineering

- Develops AI tools for transportation operations
- Research in vehicle automation, aerial and ground transport, and last mile delivery, especially focusing on how transportation systems will evolve and change in the future
- Has an NSF project to release AI tools for practitioners to use on his website that simulates traffic environments and human mobility data
- Procuring an autonomous Ford F150 to conduct research, collect data, and pilot studies
- Collaborates with computing, transportation, and agriculture departments on campus

Yunping Liang, Construction & Infrastructure Engineering

- Uses AI to review patterns in construction and infrastructure
- Sees a need to balance the computing power required by using AI
- Foresees incorporating AI into more infrastructure initiatives

Can Vuran, School of Computing

- Director of the Cyber Physical Networking Lab
- Works with the Department of War on strategic communications and naval warfare
- Has done research regarding onboard sensors in vehicles to direct radio waves
- Teaches students when and how to use AI

- Developing new programs and certificates in AI at UNL and wants to design them based on industry needs and input

Qusai Alomari, Civil & Environmental Engineering

- Here on behalf of Tewodros Yosef
- Uses AI to control structures against seismic loading and detecting damage on structures from images and computer vision
- Trying to incorporate it more in safety studies such as when researching barriers, rails, and traffic signals
- Recognizes AI is most useful when using a large repository of data (Big Data)