

Recipient/Grant (Contract) Number: 69A3552348310

Center Name: Pacific Northwest Transportation Consortium (PacTrans)

Research Priority: Improving the Mobility of People and Goods

Principal Investigator(s): Ahmed Abdel Rahim (UI), Masoumeh Heidari Kapourchali (UAA), David Y. Yang (PSU), Jia Li (WSU), Rick Sheldon (UI), Yin Hai Wang (UW)

Project Partners:

Research Project Funding: \$150,000 federal; \$150,000 non-federal match

Project Start and End Date: 8/16/2023 – 8/15/2025

Project Description: This project intends to develop course modules and tools for students to understand human-centered AI methods and data requirements, conduct specific mobility analysis using AI-empowered technologies, and build multimodal technology solutions to improve mobility. TRB Special Report 275: The Workforce Challenge highlighted data and analysis needs as critical for future transportation professionals. Therefore, this education project will help build the data component currently weak or missing in our transportation curricula. Also, the USDOT RD&T Strategic Plan highlights AI as an important technology and skill set for the next-generation transportation workforce. Thus, this project can also help train the future workforce for effective use of AI technologies in their practice.

The project outcome will deliver AI-based data integration and analytics education and workforce development modules that provide the transportation workforce with the knowledge and tools needed to assist them in improving the safety and efficiency of our nation's transportation system through innovative human-centered AI transportation applications. The project outreach and technology transfer plan will provide greater access to continuing education and workforce development opportunities to meet the evolving needs of the transportation community at the local, tribal, state, regional, and national levels. Additionally, as part of the project tasks, we will build coalitions with local, tribal, state, regional, and national collaborators, and AI vendors to ensure that our education activities address emerging issues in Machine Learning and human-centered AI applications.

US DOT Priorities: The project addresses USDOT strategic goal of "Transformation" and the research priority area of "New and Novel Technologies" through AI applications that provide people-centered mobility.

Outputs: At least one journal We anticipate at least one journal publication in a peer-reviewed journal, as well as at least one conference presentation (in addition to a presentation at the annual PacTrans conference). Additionally, we will produce at least two AI education modules for college students and practitioners.

Understanding Human-centered AI through Data Integration and Analytics

Outcomes/Impacts: The project outcome will deliver AI-based data integration and analytics education and workforce development modules that provide the transportation workforce with the knowledge and tools needed to assist them in improving the safety and efficiency of our nation's transportation system through innovative human centered AI transportation applications. The project outreach and technology transfer plan will provide greater access to continuing education and workforce development opportunities to meet the evolving needs of the transportation community at the local, tribal, state, regional, and national levels. Additionally, as part of the project tasks, we will build coalitions with local, tribal, state, regional, national collaborators, and AI vendors to ensure that our education activities address emerging issues in Machine Learning and human-centered AI applications. Upon completion of the project, a webinar/seminar will be conducted to present different HCAI education modules to the transportation community.

Final Research Report: *will provide upon completion of the project*