

Student name: Wenjun Han

Academic level/academic standing: M.S. (VT Department of Industrial Systems and Engineering; graduated)

Thesis/dissertation title and status: "A Connected Work Zone Hazard Detection System for Highway Construction Work Zones", by Wenjun Han, submitted in partial fulfillment of the requirements for the degree of Master of Science, defended on May 14, 2019.

Impact Statement: In the Safe-D work zone project, my work was to design a connected work zone system to detect imminent danger for the highway construction worker, equipment and CAV. It was my first time to develop an algorithm for a system individually. It greatly practiced my programming skills in MATLAB. I learned many functions and techniques in programming, and it increased my interest in software development. Through the design process, my ability to system thinking was greatly enhanced. To develop an algorithm, I needed to define influencing conditions and the very complicated causations between them. I put many efforts to solve logical problems and evaluate the usability of my work. I deeply realized that to create a holistic system, every detail count. It also gave me the opportunity to connect with the experts in the field of roadway work zone safety. Overall, it was an excellent opportunity for me to take part in the Safe-D project. It provided good training of my programming, system thinking, and other management skills.

Student name: Daniel Linares

Academic level/academic standing: PhD Candidate (VT Department of Building Construction)

Thesis/dissertation title and status: Project did not contribute toward this student's dissertation

Impact Statement: In the following lines, I summarize the learning outcomes from my involvement in the project: Safe-D Project 03-050: "Design and Evaluation of a Connected Work Zone Hazard Detection and Communication System for Connected and Automated Vehicles (CAVs)". My role was to support the data capturing and the testing procedures during the project. My learning outcomes from this project were in three main areas. First, I was able to get to know and work closely with expert researchers in the field of transportation. As a result, I get to learn communication procedures, safety precautions, and expected behaviors required for collaborative research. Second, this project gave me the opportunity to have hand-on practice on sensory technologies and connected technologies. This is important as I have classes related to this but being able to get hands-on during research is a valuable experience. Finally, I was able to put into practice and be part of the process of the methodology development and experimentation from the beginning until the completion of this project. Overall, working in this project definitely helped me in my current and future academic and research endeavors and gave me a perspective on challenges and ways to take advantage of the resources available to further research efforts.