

Community Informed AI-Based Vehicle Technology Simulator with Behavioral Strategies to Advance Neurodiverse Independence and Employment

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Motivation

1 in 36 Individuals in the United States have Autism Spectrum Disorder (ASD)

not autistic autistic

Each year in the US, approximately **70,000** autistic children become adults and face a litany of disheartening statistics regarding:

Independent living

Employment

Community Participation

Fewer than **30%** of driving-age autistic individuals are licensed to drive. **→ Lack of independence and ability to gain work opportunities**

Our System

AI-based Vehicle Technology Simulator with Behavioral Strategies AI-VTSBS

FOVE VR Head Mounted Display

Empatica E4 Physiology Wristband

Virtual-Reality Driving Simulator with Artificial Intelligence-based Analysis and Feedback

Curriculum built on a Cognitive Behavioral Intervention for Driving

Community-Based Participatory Research

Our Civic Partners who allow us to achieve significant impact in the community

CHAPMAN UNIVERSITY Thompson Policy Institute on Disability

We learned from the community that this project addresses a problem of real significance, and that this problem will benefit from inclusion of research to leap beyond the ways the community has worked to address this problem previously.

We use the Exploration, Preparation, Implementation, Sustainment (EPIS) framework to provide a structured and comprehensive approach to guide our process of implementing and sustaining AI-VTSBS in community settings.

AI-VTSBS Pilot Deployment Success Hinges On:

System Implementation

Community Impacts

Individual Impacts

Long-term Sustainability

Technical Aspects

- Value of virtual reality and the importance of realism in the simulated driving experience overall
- Value of physiological sensing and the importance of intelligent, real-time data processing capability.
- Value of an easy-to-implement curriculum and the importance of a high-quality instructors' guide and technical troubleshooting manual.