

Dr. Austin Valentine Angulo

## **Austin Valentine Angulo, Ph.D.**

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### **1 PERSONAL INFORMATION**

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#### **1.1 Education**

**Ph.D., Civil and Environmental Engineering** 2018-2021

University of Virginia, Charlottesville, VA

*Advisor:* Brian L. Smith

*Thesis:* Pedestrian Safety: Virtual Reality Simulator Development and Validation for Analysis of Alternative Safety Technologies

*Access:* <https://doi.org/10.18130/g1z0-ab81>

**M.S., Civil and Environmental Engineering** 2016-2018

University of Virginia, Charlottesville, VA

*Advisor:* Brian L. Smith

*Thesis:* User Recognition at Mid-Block Crossings via Connected Vehicle Technology: An Evaluation of Driver Awareness via Eye Tracking and Stated Preference Data

*Access:* <https://doi.org/10.18130/V3KH0DZ3Q>

**B.S., Civil and Environmental Engineering** 2011-2015

University of Virginia, Charlottesville, VA

#### **1.2 Work Experience**

##### **Assistant Professor | 2022-Present**

*SUNY University at Buffalo – Buffalo, NY*

- CIE 475/576 – Geometric Design of Highways – Instructor
- CIE 500 – Sustainability in Transportation – Instructor

##### **Postdoctoral Research Associate | 2021-2022**

*University of Virginia – Charlottesville, VA*

##### **Graduate Research Assistant | 2016-2021**

*University of Virginia - Charlottesville, VA*

- Co-Founder of the Omni-Reality and Cognition Lab (<https://engineering.virginia.edu/omni-reality-and-cognition-lab>)
- Dwight David Eisenhower Transportation Fellowship Graduate Research Fellow at FHWA Turner Fairbank Highway Research Center

##### **Co-Instructor – CE 2010 | 2018-2020**

*University of Virginia - Charlottesville, VA*

##### **Traffic Engineer | 2015-2016**

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*Iteris Inc. - Sterling, VA*

**Traffic Engineering Intern | 2014-2015**

*Charlottesville City Hall - Charlottesville, VA*

**Research Assistant | 2012-2014**

*University of Virginia - Charlottesville, VA*

**Highway Linesman | 2010-2012**

*Denville Line Painting Inc. - Denville, NJ*

### **1.3 Fellowships, Honors, and Awards**

UVA Civil Engineering Graduate Award for Superior Teaching	2021
Graduate Assistants in Areas of National Need Teaching Fellowship	2019-2020
FHWA Dwight D. Eisenhower Transportation Grant for Research Fellowship	2016-2019
FHWA DDETF Innovative Doctoral Research Showcase	2019
NSF Research Coordination Network - Mainstreet21 Pipeline Grant	2019
UVA Research Innovation Award Program - Seed Grant	2018
VDOT SmarterRoads Hackathon Grand Prize	2018
University of Virginia Engineering Research Symposium – 2 <sup>nd</sup> Place Podium	2018
Research Experience for Undergraduates (University of Virginia)	2013
Green Initiative Funding Tomorrow Grant (University of Virginia)	2013

## **2 RESEARCH ACTIVITIES**

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### **2.1 Publications**

**Angulo, A.V.**, Robartes, E., Guo, X., Chen, T. D., Heydarian, A., & Smith, B. L. (2023). Demonstration of virtual reality simulation as a tool for understanding and evaluating pedestrian safety and perception at midblock crossings. *Transportation Research Interdisciplinary Perspectives*, 20, 100844. <https://doi.org/10.1016/j.trip.2023.100844>

Guo, X., **Angulo, A.V.**, Tavakoli, A., Robartes, E., Chen, T. D., & Heydarian, A. (2023). Rethinking infrastructure design: Evaluating pedestrians and VRUs' psychophysiological and behavioral responses to different roadway designs. *Scientific Reports*, 13(1), Article 1. <https://doi.org/10.1038/s41598-023-31041-9>

Guo, X., Tavakoli, A., **Angulo, A.V.**, Robartes, E., Chen, T. D., & Heydarian, A. (2023). Psycho-physiological measures on a bicycle simulator in immersive virtual environments: How protected/curbside bike lanes may improve perceived safety. *Transportation Research Part F: Traffic Psychology and Behaviour*, 92, 317–336. <https://doi.org/10.1016/j.trf.2022.11.015>

Saglio, A., Robartes, E., Chen, T. D., Heydarian, A., Guo, X., & **Angulo, A.V.** (2023). Examining Socioeconomic and Physiological Factors Affecting Preferences for Cycling Infrastructure Using Virtual Reality Experimentation. *Transportation Research Record*,

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03611981231168834. <https://doi.org/10.1177/03611981231168834>

Guo, X., **Angulo, A.V.**, Robartes, E., Chen, T. D., & Heydarian, A. (2022). ORCLSim: A System Architecture for Studying Bicyclist and Pedestrian Physiological Behavior through Immersive Virtual Environments. *Journal of Advanced Transportation*, 2022, e2750369. <https://doi.org/10.1155/2022/2750369>

Guo, X., Robartes, E. M., **Angulo, A.V.**, Chen, T. D., & Heydarian, A. (2021). Benchmarking the Use of Immersive Virtual Bike Simulators for Understanding Cyclist Behaviors. *Proceedings 2021 ASCE 13CE*. <https://doi.org/10.31224/osf.io/mrxgh>

**Angulo, A.V.**, & Smith, B. L. (2021). Evaluation of driver performance with a prototype cyber physical mid-block crossing advanced warning system. *Journal of Safety Research*, 79, 237–245. <https://doi.org/10.1016/j.jsr.2021.09.004>

**Angulo, A.V.**, Guo, X., Chen, T., Heydarian, A., Smith, B. *In Prep*  
Evaluating current and future midblock crossing safety treatments using virtual reality simulation

## **2.2 Presentations**

### *2.2.1 Contributed Talks*

de Cardenas, C., **Angulo, A.V.**, Saglio, A., Gering, B., Barnes, J., Cian, L., Mondschein, A., Chen, T.D. 2023. Variations in attention, heart rate, and preferences while walking on an urban streets in open or closed to vehicles. Ux+Design Annual Meeting, Medford, MA.

**Angulo, A.V.**, Robartes, E., Guo, X., Chen, T., Heydarian, A., Smith, B. 2022. Virtual reality vs. real-world: A validation of pedestrian safety at midblock crossings. ASCE ICTD 2022 Annual Meeting, Seattle, Washington.

**Angulo, A.V.**, Robartes, E., Guo, X., Chen, T., Heydarian, A., Smith, B. 2022. Evaluating current and future mid-block crossing safety treatments using virtual reality simulation. ASCE ICTD 2022 Annual Meeting, Seattle, Washington.

**Angulo, A.V.**, Robartes, E., Guo, X., Chen, T., Heydarian, A., Smith, B. 2022. Validation of virtual reality simulator with real-world observations for pedestrian safety at midblock crossings. Transportation Research Board 2022 Annual Meeting, Washington, DC.

**Angulo, A.V.**, Robartes, E., Guo, X., Chen, T., Heydarian, A. 2021. Development of virtual reality simulators to assess perceived safety of vulnerable road users. Transportation Research Board 2021 Annual Meeting, Washington, DC.

Guo, X., **Angulo, A.V.**, Robartes, E., Chen, T., Heydarian, A. 2021. Assessing and improving cyclists' situational awareness and safety through physiological sensing and augmented reality technology. Transportation Research Board 2021 Annual Meeting, Washington, DC.

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**Angulo, A.V.**, Robartes, E., Chen, T., Heydarian, A. 2020. The use of virtual reality simulators in bicycle and pedestrian human subject testing: A synthesis. Transportation Research Board 2020 Annual Meeting, Washington, DC.

**Angulo, A.V.**, Robartes, E., Chen, T., Heydarian, A. 2019. Development of virtual reality simulators to assess perceived safety of vulnerable road users. Transportation Research Board 2019 Annual Meeting, Washington, DC.

**Angulo, A.V.**, Smith, B. 2019. User recognition at mid-block crossings via connected vehicle technology: An evaluation of driver awareness via eye tracking and stated preference data. Transportation Research Board 2019 Annual Meeting, Washington, DC. *\*Federal Highway Administration's Dwight D. Eisenhower Innovative Doctoral Research Showcase*

**Angulo, A.V.** 2019. Should DSRC and C-V2X Coexist? Debate. Transportation Research Board 2019 Annual Meeting, Washington, D.C.

**Angulo, A.V.** 2018. The Omni-Reality and Cognition Lab: An overview. Virginia Department of Transportation - Transportation Planning and Advisory Committee.

**Angulo, A.V.**, Laffey, S., and Smith, B. 2018. User recognition at mid-block crossings via connected vehicle technology. Virginia Bicycle and Pedestrian Action Committee, Roanoke, VA

**Angulo, A.V.** and Laffey, S. 2017. User recognition at mid-block crossings via connected vehicle technology. ITS and VASITE, Richmond, VA.

### *2.2.2 Seminars*

**Angulo, A.V.** 2023. Understanding transportation safety utilizing simulation methodologies. UB Human Factors and Ergonomics Society Student Chapter Seminar Series.

**Angulo, A.V.** 2022. Simulation Methodologies in Transportation. UB ITE Student Chapter Seminar Series, Buffalo, NY.

### *2.2.3 Posters*

**Angulo, A.V.**, Robartes, E., Guo, X., Chen, T., Heydarian, A., Smith, B. 2022. Evaluating current and future mid-block crossing safety treatments using virtual reality simulation. Transportation Research Board 2022 Annual Meeting, Washington, DC.

**Angulo, A.V.**, Robartes, E., Chen, T., Heydarian, A. 2020. Virtual reality as a tool for understanding pedestrian and bicyclist perceptions and safety. UVA Engineering Systems and Environment Graduate Research Symposium 2020, Charlottesville, VA.

## **4 PROFESSIONAL SERVICE AND DEVELOPMENT**

### **4.1 Professional Service**

Scholarship Committee – UB CSE

2022-Present

NSF Engineering Research Visioning Alliance: Sustainable Transportation Networks - Participant 2022

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Department Graduate Student Council – Representative – UVS ESE 2019-2021  
VDOT Hackathon Guidelines Co-Author 2019

#### **4.2 Outreach**

Engineering Systems and Environment Graduate Recruitment 2017

#### **4.3 Professional Development**

Institute of Transportation Engineers Student Chapter 2019-2021  
Teaching Science in Higher Education, University of Virginia 2018  
Undergraduate Researcher, University of Virginia 2011-2015

#### **4.4 Manuscript Reviewer**

*Transportation Research Interdisciplinary Perspectives*  
*Transportation Research Part F: Traffic Psychology and Behavior*  
*Journal of Intelligent Transportation Systems: Technology, Planning, and Operations*  
*The IEEE Intelligent Transportation Systems Society Conference*

#### **4.5 Society Memberships**

American Society of Civil Engineers  
Transportation and Development Institute  
Institute of Transportation Engineers  
Theta Tau Professional Engineering Fraternity