2020 TRB
ANNUAL MEETING

JANUARY
12th-16th

Travel Behaviour and Safety Studies from the Psychological / Neurophysiological Perspective: Application of Virtual Reality

Sunday, January 12, 2020, 1:30 PM - 4:30 PM, Convention Center

Combining VR with psychological and neurophysiological monitoring is an emerging direction in transportation that is expected to introduce a new dimension for understanding behavior and safety. After short presentations on recent combined VR with psychological and neurophysiological studies, attendees will be able to set up a virtual environment in one of the studies' applications developed by Dr. Anae Sobhani of Utrecht University. (See computer system requirements below).

Agenda

Time	Description of Activities
1:30- 1:40	Welcome and Opening Remarks (Anae Sobhani and Zachary Patterson)
1:40-2:00	Using Virtual Reality to Help Children Learn the Cognitive-Perceptual Skills Required for Safe Street-Crossing (David C. Schwebel)
2:00- 2:20	Analysis of Driver Willingness to Adapt to Connected and Autonomous Vehicle Using Virtual Immersive Reality Environment (Shadi Djavadian)
2:20- 2:40	Travel Behaviour and Safety Studies from the Psychological/ Neurophysiological Perspective: Application of Virtual Reality (Elisabetta Cherchi)
2:40- 3:00	Expanding On Immersive Virtual Reality Environment: Integrating Physiological and Neuropsychological Measures in Pedestrian Behaviour and Risk Perception Analysis (Bart Hendriks)
3:00- 3:20	Psychophysiological Methods in the Context of Pedestrian Mobility (Panos Mavros)
3:20- 4:30	Hands on workshop on the use of the Virtual Immersive Reality Environment from the Psychological/Neurophysiological Perspective

Using Virtual Reality to Help Children Learn the Cognitive-Perceptual Skills Required for Safe Street-Crossing

David C. Schwebel

David C. Schwebel is University Professor of Psychology and Associate Dean at the University of Alabama at Birmingham. Dr. Schwebel is a Woodrow Wilson Scholar, a Fulbright Award winner, and a Fellow of the American Psychological Association. He has served as Principal Investigator on grants worth over $7.2 million and his research has been funded by NIH, CDC, DOT, several other federal, non-profit and industry groups. Dr. Schwebel has published over 270 peer-reviewed manuscripts, most focusing on understanding and preventing unintentional injury in children.

Analysis of Driver Willingness to Adapt to Connected and Autonomous Vehicle (CAVs) Using Virtual Immersive Reality Environment (VIRE)

Shadi Djavadian

Shadi Djavadian, is a Senior Postdoctoral Research Fellow at the Laboratory of Innovations in Transportation (LiTrans) at Ryerson University. Shadi's research explores the applications of automation & communication in vehicles, their effect on reducing congestion and GHG emissions. Her research also looks at mobility behavior and response to automation using Virtual Immersive Reality Environment (VIRE).

Travel Behaviour and Safety Studies from the Psychological / Neurophysiological Perspective: Application of Virtual Reality

Elisabetta Cherchi

Elisabetta Cherchi is Professor at the School of Engineering, Future Mobility Group, Newcastle University and Adjunct Professor, School of Economics and Management, Beijing Jiaotong University, China. She is co-Editor in Chief of Transportation Research Part A: Policy and Practice. She is the Chair of the International Association for Travel Behavior Research (IATBR), as well as past Secretary and Treasurer of the IATBR. Her main research interest is in the demand modelling of consumer behavior.

Expanding On Immersive Virtual Reality Environment: Integrating Physiological and Neuropsychological Measures in Pedestrian Behaviour and Risk Perception Analysis

Bart Hendriks

Bart Hendriks is a graduate student in Human Geography and Public Administration at Utrecht University and Erasmus University Rotterdam respectively. His interests include (active) transportation, public policy innovation, and behavior analysis. This presentation is based on his Master's degree thesis supervised by Dr. Anae Sobhani, Assistant Professor in the Department of Human Geography and Planning at Utrecht University.

Window to Pedestrians' Experience: Psychophysiological Methods in the Context of Pedestrian Mobility

Panos Mavros

Dr. Panagiotis (Panos) Mavros is Senior Postdoctoral Researcher and project coordinator of the Cognition Perception and Behavior in Urban Environments group at the Future Cities Laboratory (FCL) of the Singapore- ETH Centre, in Singapore. At the Future Cities Laboratory, Panos' research is focused in on wayfinding

Minimum computer system requirements for VIRE:

CPU: Intel i3-6100 / AMD Ryzen 3 1200, FX4350 or greater
Graphic card: NVIDIA GTX 960 4GB or greater
Memory: 8GB RAM or more
Ports: 1 USB 3, 2 USB 2, and HDMI 1.3 video out
OS: Windows 10 or more

Sponsored by:

Standing Committee on Travel Survey Methods (ABJ40)
Standing Committee on Urban Transportation Data and Information Systems (ABJ30)
Standing Committee on Traveler Behavior and Values (ADB10)