

# PROGRAM OVERVIEW

## WIFI

Network:  
**Sheraton Meetings**

Password:  
**acmtoronto**



10th International ACM Conference on  
**Automotive User Interfaces and  
Interactive Vehicular Applications**

September 23-25, 2018, Toronto, Canada  
with Doctoral Colloquium on September 22

[auto-ui.org](http://auto-ui.org)

  #AutoUI2018

SUPPORTED BY

# Sponsors

## ○ PRINCIPAL SPONSOR



UNIVERSITY OF TORONTO  
FACULTY OF APPLIED SCIENCE & ENGINEERING

## ● PLATINUM SPONSORS



Transports  
Canada

Transport  
Canada

## ● GOLD SPONSORS



## ● SILVER SPONSORS



Collaborative Safety Research Center  
TOYOTA



## SUPPORTING ORGANIZATIONS



Association for  
Computing Machinery



SIGCHI



UNIVERSITY OF TORONTO  
FACULTY OF APPLIED SCIENCE & ENGINEERING



# Day 1, September 23

**Registration, 8:00 - 16:00:**  
Bahen Atrium, Ground Floor

LOCATION  
BAHEN CENTRE FOR INFORMATION TECHNOLOGY  
UNIVERSITY OF TORONTO

COFFEE & TEA, 8:00–9:00

---

MORNING WORKSHOPS, 9:00–13:00

**W1:** 2nd Workshop on Trust in the Age of Automated Driving (Location: BA 2155)

**W2:** 2nd Workshop on Augmented Reality for Intelligent Vehicles (AVR 2018) (BA 2165)

**W3:** Workshop on Designing Highly Automated Driving Systems as Radical Innovation (BA 2175)

**W4:** Automotive UI for Controllability and Safe Transitions of Control (BA 2185)

**W5:** Workshop on Methodology: Evaluating Interactions Between Automated Vehicles and Other Road Users - What Works in Practice? (BA 2195)

---

COFFEE BREAK, 10:00–10:30

---

LUNCH, 13:00–14:00

---

AFTERNOON WORKSHOPS, 14:00–18:00

**W6:** 2nd Workshop on Situation Awareness in Automotive Evaluation & Design (BA 2155)

**W7:** The Mobile Office (BA 2165)

**W8:** Emotional GaRage: A Workshop on In-Car Emotion Recognition and Regulation (BA 2175)

**W9:** User Interfaces for Public Transport Vehicles: Future Opportunities and Challenges (BA 2185)

**W10:** Workshop on Communication Between Automated Vehicles and Vulnerable Road Users (BA 2195)

---

COFFEE BREAK, 15:30–16:00

---



# Day 2, September 24

Registration, 7:30 - 16:00:  
Foyer of Civic Ballroom

LOCATION  
SHERATON CENTRE HOTEL

## ● BREAKFAST, 7:15–8:30

LOCATION: FOYER OF CIVIC BALLROOM

---

## WELCOME SESSION, 8:30–9:00

CIVIC BALLROOM

---

## KEYNOTE SPEAKER: CHRISTOPHER A. HART, 9:00–10:00

CIVIC BALLROOM

Autonomous Vehicles - Lessons from Aviation; Future Challenges

---

## COFFEE BREAK, 10:00–10:30

FOYER OF CIVIC BALLROOM

---

## VIDEOS, 10:30–10:45

CIVIC BALLROOM

Listen to Your Drive: An In-Vehicle Sonification System Based on Driver Affective States and Driving Data

Theo, take a right... uh... left? Conversational Route Negotiations With Autonomous Driving Assistants

Predictive Touch: A Novel HMI Technology for Intelligent Displays in Automotive Systems

Car Interaction Design for Car-Sharing Systems

Man vs. Machine: A Documentary About Automated Driving In 2018 Somewhere In Bavaria

---

## SESSION 1: HAPTICS AND GESTURES, 10:45–12:00

CIVIC BALLROOM

May the Force Be with You: Ultrasound Haptic Feedback for Mid-Air Gesture Interaction in Cars

Exploring the Use of Mid-Air Ultrasonic Feedback to Enhance Automotive User Interfaces

Selection Facilitation Schemes for Predictive Touch with Mid-air Pointing Gestures in Automotive Displays

Reducing the Attentional Demands of In-Vehicle Touchscreens with Stencil Overlays

Investigation of Thermal Stimuli for Lane Changes

---

## LUNCH, 12:00–13:30

FOYER OF CIVIC BALLROOM



## SESSION 2: ATTENTIVE USER INTERFACES, 13:30–14:30 *CIVIC BALLROOM*

Let Me Finish Before I Take Over: Towards Attention Aware Device Integration in Highly Automated Vehicles

Predicting Environmental Demand and Secondary Task Engagement using Vehicle Kinematics from Naturalistic Driving Data

Using Smartwatch Inertial Sensors to Recognize and Distinguish Between Car Drivers and Passengers

The Effect of Road Bumps on Touch Interaction in Cars

---

## INTERACTIVE DEMOS & COFFEE, 14:30–16:00 *KENT AND HURON*

D1: Application of Augmented Reality for Multi-Scale Interactions in Emergency Vehicles

D2: Raux: A Supportive System for Remote Automotive Ux R&D

D3: Scribble Your Way Through Traffic

D4: Demonstration of a Low-Cost Hyper-Realistic Testbed for Designing Future Onboard Experiences

D5: Multi-Display Prototyping Using Any Browser Based UX Tools

D6: In-vehicle Affect Detection System: Identification of Emotional Arousal by Monitoring the Driver and Driving Style

D7: A Low-Cost VR-Based Automated Driving Simulator for Rapid Automotive UI Prototyping

---

## SESSION 3: USER EXPERIENCE AND ACCEPTANCE, 16:00–17:00 *CIVIC BALLROOM*

Who is Generation A? Investigating the Experience of Automated Driving for Different Age Groups

How to Design Valid Simulator Studies for Investigating User Experience in Automated Driving - Review and Hands-On Considerations

Calibration of Trust Expectancies in Conditionally Automated Driving by Brand, Reliability Information and Introductory Videos: An Online Study

Acceptance Factors for Future Workplaces in Highly Automated Trucks

# Day 2, September 24

LOCATION  
STEAM WHISTLE BREWERY

COCKTAIL RECEPTION, 18:30–19:30

---

THE UNIVERSITY OF TORONTO, APPLIED SCIENCE AND ENGINEERING  
DINNER BANQUET & KEYNOTE SPEAKER ANGELA SCHOELLIG,  
19:30–22:00

Self-Driving Technology Today: What We Can and Cannot (Yet) Do



# Day 3, September 25

Registration, 7:30 - 16:00:  
Foyer of Civic Ballroom

LOCATION  
SHERATON CENTRE HOTEL

## ● BREAKFAST, 7:15–8:30

FOYER OF CIVIC BALLROOM

### SESSION 4: AUGMENTED REALITY, 8:30–9:30

CIVIC BALLROOM

Establishing the Role of a Virtual Lead Vehicle as a Novel Augmented Reality Navigational Aid

Camera-View Augmented Reality: Overlaying Navigation Instructions on a Real-Time View of the Road

Effect of Volumetric Displays on Depth Perception in Augmented Reality

Augmented Reality Displays for Communicating Uncertainty Information in Automated Driving

### PAPERS POSTER SESSION & COFFEE, 9:30–11:00

KENT AND HURON

P1: Design Guidelines for Reliability Communication in Autonomous Vehicles

P2: gAR-age: A Feedback-Enabled Blended Ecosystem for Vehicle Health Monitoring

P3: How Usability Can Save the Day – Methodological Considerations for Making Automated Driving a Success Story

P4: Where Autonomous Buses Might and Might Not Bridge the Gaps in the 4 A's of Public Transport Passenger Needs – A Review

P5: Eliciting Driver Stress Using Naturalistic Driving Scenarios On Real Roads

P6: Looming Auditory Collision Warnings for Semi-Automated Driving: An EEG/ERP Study

P7: Evaluating How Interfaces Influence the User Interaction with Fully Autonomous Vehicles

P8: An Investigation into Glance-free Operation of a Touchscreen With and Without Haptic Support in the Driving Simulator

P9: Designing a Guardian Angel: Giving an Automated Vehicle the Possibility to Override its Driver

P10: I See Your Point: Integrating Gaze to Enhance Pointing Gesture Accuracy While Driving

### SESSION 5: COORDINATION W/ OTHER ROAD USERS, 11:00–12:00

CIVIC  
BALLROOM

Follow Me: Exploring Strategies and Challenges for Collaborative Driving

To Cross or Not to Cross: Urgency-Based External Warning Displays on Autonomous Vehicles to Improve Pedestrian Crossing Safety

A Field Study Of Pedestrians And Autonomous Vehicles

¡Vamos! Observations of Pedestrian Interactions with Driverless Cars in Mexico



LUNCH, 12:00–12:30

FOYER OF CIVIC BALLROOM

---

LUNCHTIME PANEL, 12:30–13:30

CIVIC BALLROOM

Automotive User Interfaces - What We Know and the Future

**Moderator:** Joanne Harbluk, Transport Canada

**Panelists:** Gary Burnett (University of Nottingham), Jeffrey Greenberg (Ford USA),  
Andreas Riener (Technische Hochschule Ingolstadt), Bobbie Seppelt (MIT)

---

WIP POSTER SESSION + COFFEE, 13:30–15:30

KENT AND HURON

P1 - Defining Ritualistic Driver and Passenger Behaviour to Inform In-Vehicle Experiences

P2 - A Comparison of Emotion Elicitation Methods for Affective Driving Studies

P3 - Interface Concepts for Intent Communication from Autonomous Vehicles to Vulnerable Road Users

P4 - Gaze Tracking Accuracy Maintenance using Traffic Sign Detection

P5 - Adaptive Trust Calibration for Supervised Autonomous Vehicles

P6 - Identifying the Factors Influencing Older Adults' Perceptions of Fully Automated Vehicles

P7 - A Video-based Study Comparing Communication Modalities between an Autonomous Car and a Pedestrian

P8 - Evaluation of Driving Performance and User Experience of Different Speedometer Types

P9 - personalDash: First Steps Towards User-controlled Personalization of 3D Dashboards with Mobile Devices

P10 - Feature Values of Unsafe Driving Performance Caused by the Symptoms of Stroke for Driver Abnormality Detection System

P11 - Steer-By-WiFi: Lateral Vehicle Control for Take-Overs with Nomadic Devices

P12 - DriverSense: a Hyper-realistic Testbed for the Design and Evaluation of Novel User Interfaces in Self-Driving Vehicles

P13 - Biometric Interface for Driver's Stress Detection and Awareness



## WIP POSTER SESSION + COFFEE, 13:30–15:30

*KENT AND HURON*

P14 - An Augmented Reality Display for Conditionally Automated Driving

P15 - Early Take-Over Preparation in Stereoscopic 3D

P16 - Evaluation of Variables for the Communication of Uncertainties Using Peripheral Awareness Displays

P17 - Preliminary Evaluation of Variables for Communicating Uncertainties Using a Haptic Seat

P18 - Unskilled and Unaware: Subpar Users of Automated Driving Systems Make Spurious Decisions

P19 - Approach for Enhancing the Perception and Prediction of Traffic Dynamics with a Tactile Interface

P20 - Enhanced Traffic Simulation for Improved Realism in Driving Simulators

P21 - Beyond Transportation: How to Keep Users Attached When They Are Neither Driving nor Owning Automated Cars?

P22 - Automotive Research in the Public Space -- Towards Deployment-Based Prototypes For Real Users

P23 - The Impact of Advanced Vehicle Technologies on Older Driver Safety: A Scoping Review of Subjective Outcomes

P24 - LED Visualizations for Drivers' Attention: An Exploratory Study on Experience and Associated Information Contents

P25 - I Drive My Car and My States Drive Me: Visualizing Driver's Emotional and Physical States

P26 - How can Automotive User Interfaces Represent Kinetic Energy as a Resource? An Interview Study with Hybrid Electric Vehicle Eco-Drivers

P27 - Just Look: The Benefits of Gaze-Activated Voice Input in the Car

P28 - Man vs. Machine: Comparing a Fully Automated Bus Shuttle with a Manually Driven Group Taxi in a Field Study

## SESSION 6: DRIVING IN CONTEXT, 15:30–16:30

*CIVIC BALLROOM*

Where to Look: Exploring Peripheral Cues for Shifting Attention to Spatially Distributed Out-of-View Objects

Drowsiness Detection and Warning in Manual and Automated Driving: Results from Subjective Evaluation

Don't Be Alarmed: Sonifying Autonomous Vehicle Perception to Increase Situation Awareness

Why Disable the Autopilot?

---

## CLOSING REMARKS, 16:30–17:00

*CIVIC BALLROOM*

## OPTIONAL DRIVING SIMULATOR TOUR

AutomotiveUI registrants are invited to attend a tour of the Toronto Rehabilitation Institute's iDAPT Centre on September 26th, 2018.

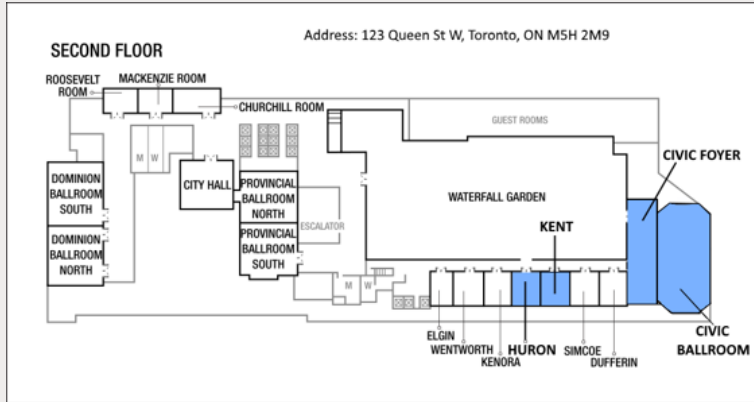
See the world's first hydraulic motion simulator with interchangeable chambers that can be lifted on and off the base. These chambers generate different climates, weather conditions, motions, slopes and terrain. They include 3D virtual reality environments such as StreetLab, that simulates a typical urban street, and DriverLab that simulates driving.

If you are interested in visiting this one of a kind research lab, you can sign up for one of two sessions **(11:00-11:45; 12:00-12:45)** at the registration desk anytime during the conference.

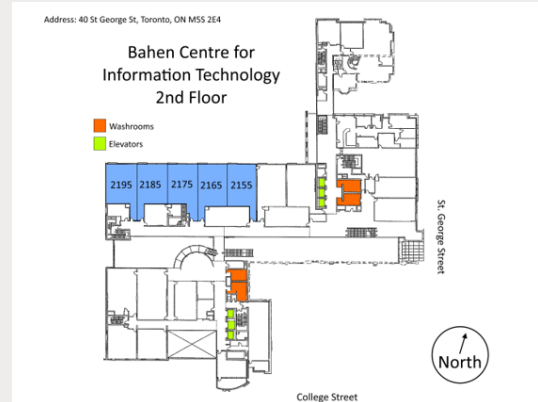
More information about the iDAPT Centre: <http://www.idapt.org/index.php/labs-services/research-labs/ceal-labs>

# Maps

## SHERATON CENTRE HOTEL



## BAHEN CENTRE (WORKSHOPS)



## STEAM WHISTLE BREWERY (BANQUET)

**Sheraton Hotel**  
Address: 123 Queen St W  
Toronto, ON M5H 2M9

**Steam Whistle Brewing**  
Address: 255 Bremner Blvd  
Toronto, ON M5V 3M9  
Located in: Roundhouse Park

