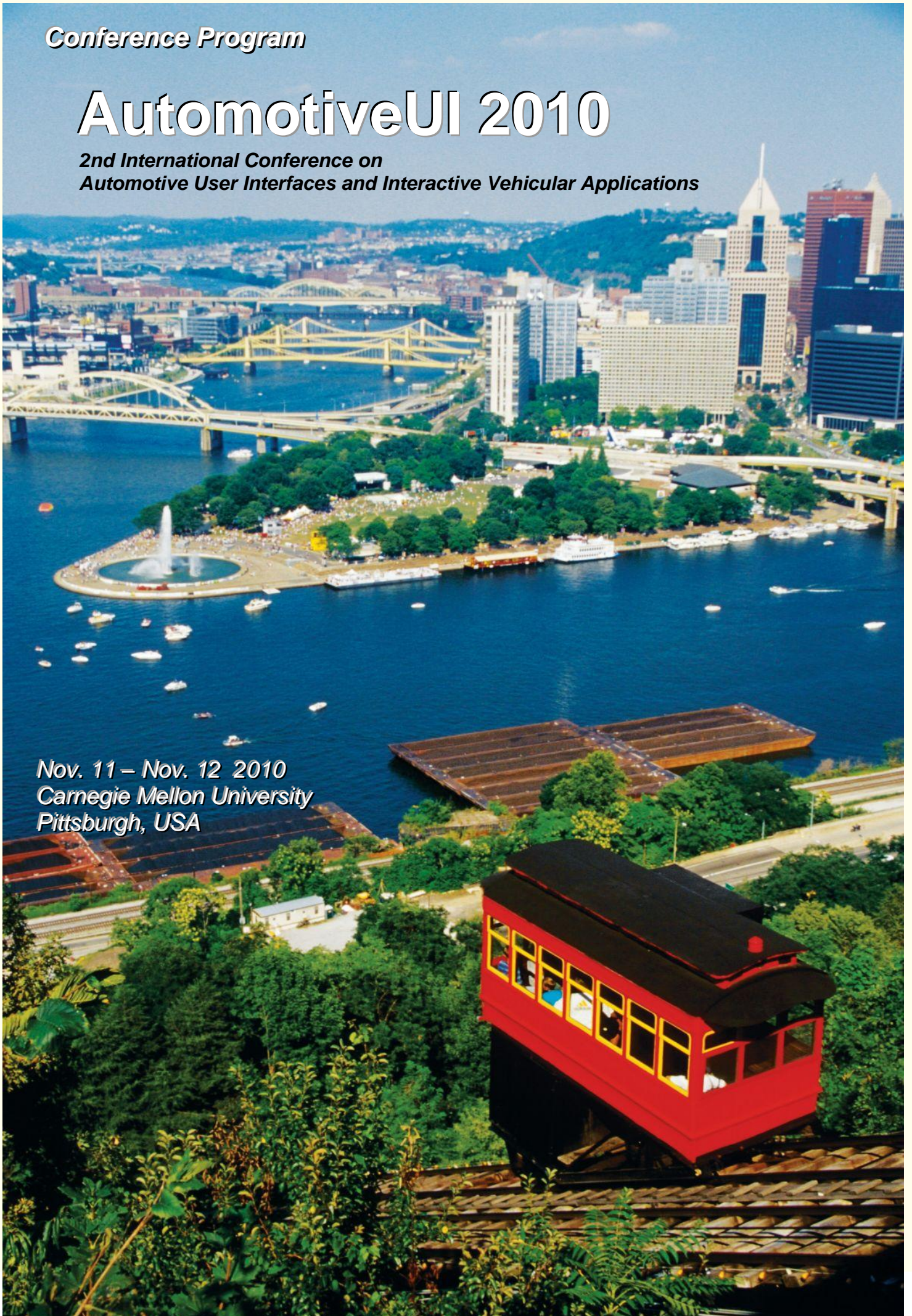*Conference Program*

AutomotiveUI 2010

*2nd International Conference on
Automotive User Interfaces and Interactive Vehicular Applications*

*Nov. 11 – Nov. 12 2010
Carnegie Mellon University
Pittsburgh, USA*

Keynote Talk

What To Do With 100 Million GPS Points

By Dr. John Krumm (Senior Researcher, Microsoft Research)

GPS is one of the best sensors ever. Besides its traditional applications for consumers and business, engineers and researchers continue to find innovative ways to use it. We have been collecting GPS data from vehicles and people for the past six years, with over 155 million GPS points collected from about 700 different cars and individuals. In this talk, I will describe our research at Microsoft in using GPS data to model and predict where people go, investigate location privacy, and create road maps. I will also talk about some practical tools for research like this, some pitfalls, and ideas for new projects.

Dr. John Krumm is a senior researcher at Microsoft Research, working there since 1997 on computer vision and location. Before that he worked on robot vision at Sandia National Laboratories. He has a PhD in Robotics from Carnegie Mellon University. He has 38 U.S. patents. His first car was a 1974 Volkswagen Beetle, bought used in 1980. In 1986 he bought a new Honda CRX, which he sold in 1996 to buy a 1992 Nissan 300ZX. After the arrival of his second daughter, he sold the 300ZX to buy a Honda minivan. He recently bought a 2003 BMW M3 which his wife is reluctant to drive because of the paddle shift transmission.

Biography

Dr. John Krumm graduated from Carnegie Mellon University in 1993 with a PhD in robotics and a thesis on texture analysis in images. He worked at the Robotics Center of Sandia National Laboratories in Albuquerque, New Mexico for the next four years. His main projects there were computer vision for object recognition for robots and occupant detection for cars. Since 1997 he has been a researcher at Microsoft Research in Redmond, Washington, USA concentrating on location tracking of people and devices and on ways of using location data to benefit the user. He is a member of ACM and IEEE, holds 38 U.S. patents, and serves on the editorial board the Journal of Location Based Services.

Dr. John Krumm

THURSDAY November 11, 2010

08:00-09:00	**Breakfast (GHC 6121)**

09:00-09:30	**Welcome and introduction (GHC 6115)**

09:30-10:30	**Keynote (GHC 6115) –** *John Krumm, Microsoft Research*
	What To Do With 100 Million GPS Points

10:30-11:00	**Coffee Break**

11:00-12:00	**Session 1: Attention and distraction (GHC 6115)** *Chair: Ute Winter (General Motors, Israel)*

Managing in-vehicle distractions - Evidence from the Psychological Refractory Period Paradigm
> Daryl Hibberd, Samantha Jamson, and Oliver Carsten (University of Leeds, United Kingdom)

The Importance of Task Duration and Related Measures in Assessing Distraction Potential of In-Vehicle Tasks
> Peter Burns (Transport Canada, Canada); Joanne Harbluk (Transport Canada, Canada); James Foley (Toyota Technical Center, USA); Linda Angell (Touchstone Evaluations, Inc., USA)

Enhancing Assessment of In-Vehicle Technology Attention Demands with Cardiac Measures
> John Lenneman and Richard Backs (Central Michigan University, USA)

Effect of Emotional Speech Tone on Driving from Lab to Road: fMRI and ERP Studies
> Li Hsieh (Wayne State University, USA); Sean Seaman (Wayne State University, USA); Richard Young (Wayne State University School of Medicine, USA)

12:00-13:30	**Lunch provided (GHC 6121)**

13:30-15:00	**Session 2: Speech and sound (GHC 6115)** *Chair: James Foley (Toyota Technical Center, USA)*

Speech Recognition Interface Design for In-Vehicle System
> Zhang Hua and Weilieh Ng (Continental Automotive Singapore Pte Ltd, Singapore)

Language Pattern Analysis for Automotive Natural Language Speech Applications
> Ute Winter (General Motors, Israel); Timothy Grost (General Motors, USA); Omer Tsimhoni (General Motors, Israel)

Voice Interfaced Vehicle User Help
> Ignacio Alvarez (Clemson University, USA); Aqueasha Martin (Clemson University, USA); Jerone Dunbar (Clemson University, USA); Joachim Taiber (Clemson University, USA); Dale-Marie Wilson (University of North Carolina at Charlotte, USA); Juan Gilbert (Clemson University, USA)

Auditory Messages for Speed Advice in Advanced Driver Assistance Systems
> Qonita Shahab, Jacques Terken, and Berry Eggen (Eindhoven University of Technology, The Netherlands)

Spoken Tasks for Human-Human Experiments: Towards In-Car Speech User Interfaces for Multi-Threaded Dialogue
> Andrew L Kun (University of New Hampshire, USA); Alexander Shyrokov (University of New Hampshire, USA); Peter A. Heeman (OHSU, USA)

THURSDAY November 11, 2010 (ctd)

15:00-15:30	**Coffee Break**

15:30-17:00	**Poster session (GHC 6121)** *Chair: Ben Reaves (Toyota InfoTechnology Center, USA)*

18:00-21:00	**Dinner at the Carnegie Museum:** Guided tour of the museum / Dinner at the museum

FRIDAY   November 12, 2010

08:00-09:00	**Breakfast (GHC 6121)**

09:00-10:00	**Session 3: Exploring modes of interaction (GHC 6115)** *Chair: Andreas Riener (Johannes Kepler University Linz, Austria)*

Where to turn my car? Comparison of a Tactile Display and a Conventional Car Navigation System under High Load Condition
> Amna Asif and Susanne Boll (University of Oldenburg, Germany)

HapTouch and the 2+1 State Model: Potentials of Haptic Feedback on Touch Based In-Vehicle Information Systems
> Hendrik Richter (University of Munich (LMU), Germany); Ronald Ecker (BMW Group Research and Technology, Germany); Christopher Deisler (BMW Group Research and Technology, Germany); Andreas Butz (University of Munich, Germany)

Visual Cues supporting Direct Touch Gesture Interaction with In-Vehicle Information Systems
> Ronald Ecker (BMW Group Research and Technology, Germany); Verena Broy (BMW Research and Technology, Germany); Katja Hertzschuch (BMW Group Research and Technology, Germany); Andreas Butz (University of Munich, Germany)

10:00-10:30	**Coffee Break**

10:30-12:00	**Session 4: Exploring modes of interaction (GHC 6115)** *Chair: Manfred Tscheligi (University of Salzburg, Austria)*

Improving Haptic-Assisted Vehicular Window Adjustment Accuracy with Varying Intermediate Forces
> John Holmen and Mehrdad H Zadeh (Kettering University, USA)

Subliminal notification of CO2 emission while driving
> Andreas Riener, Alois Ferscha, Peter Frech, Michael Hackl, and Marius Kaltenberger (University of Linz, Austria)

Evaluating Informative Auditory and Tactile Cues for In-Vehicle Information Systems
> Yujia Cao, Frans van der Sluis, Mariët Theune, Rieks op den Akker, and Anton Nijholt (University of Twente, The Netherlands)

Making Use of Drivers' Glances onto the Screen for Explicit Gaze-Based Interaction
> Dagmar Kern (University Duisburg-Essen, Germany); Angela Mahr, Sandro Castronovo, Albrecht Schmidt, and Christian Müller (German Research Center for Artificial Intelligence, Germany)

FRIDAY **November 12, 2010 (ctd)**

12:00-13:30	**Lunch (GHC 6121)**

13:30-15:00	**Session 5: Supporting the driver (GHC 6115)** *Chair: Andrew Gellatly (General Motors, USA)*

Enabling Micro-Entertainment in Vehicles based on Context Information

Florian Alt, Dagmar Kern, Fabian Schulte, Bastian Pfleging, Alireza Sahami, and Albrecht Schmidt (University of Duisburg-Essen, Germany)

Influences on User Acceptance: Informing the Design of Eco-Friendly In-Car Interface

David Wilfinger, Alexander Meschtscherjakov, Martin Murer, and Manfred Tscheligi (University of Salzburg, Austria)

Interaction Weaknesses of Personal Navigation Devices

Markus Hipp (University of Ulm, Germany); Florian Schaub (University of Ulm, Germany); Frank Kargl (University of Twente, The Netherlands); Michael Weber (University of Ulm, Germany)

Managing Speed in Inclement Conditions Using an In-Vehicle Interface

Jane Barrow, David Cades, David G Kidd, Erik Nelson, and Daniel Roberts (George Mason University, USA)

Semi-Autonomous Virtual Valet Parking

Arne Suppé, Luis Navarro-Serment, and Aaron Steinfeld (Carnegie Mellon University, USA)

15:00-15:30	**Coffee Break**

15:30-16:30	**Session 6: Connected cars (GHC 6115)** *Chair: Tom Miller (University of New Hampshire, USA)*

Supporting Unplanned Activities Through Cross-Device Interaction

Timothy Sohn (Nokia Research Center, USA); Agathe Battestini (Nokia Research Center, Finland); Hiroshi Horii (Nokia Research Center, USA); Elizabeth Bales (UCSD, USA); Vidya Setlur (Nokia Research Center, USA); Koichi Mori (Nokia Research Center, USA)

Terminal Mode - Transforming Mobile Devices into Automotive Application Platforms

Raja Bose (Nokia Research Center, USA); Jörg Brakensiek (Nokia, USA); Keun-Young Park (Nokia Research Center Palo Alto, USA)

Journey: General Motors' move to incorporate Contextual Design into its Next Generation of Automotive HMI Designs

Andrew W Gellatly, Cody Hansen, Matthew Highstrom, and John Weiss (General Motors, USA)

Service and User Interface transfer from nomadic devices to car infotainment systems

Jan Sonnenberg (Technische Universität Braunschweig, Germany)

16:30-17:00	**Closing**

Posters (GHC 6121)

Chair: Ben Reaves (Toyota InfoTechnology Center, USA)

On In-Car User Interfaces for Car-2-X Pull-Applications: Design Considerations for HMIs
   Sandro Castronovo, Angela Mahr, and Christoph Endres (DFKI Saarbrücken, Germany)

Interface Outside: Extending the V2X Communication Framework for Vulnerable Road User Protection
   Sandro Castronovo and Christoph Endres (DFKI Saarbrücken, Germany)

Preferences for Methods of Destination Entry
   Jackie C. Chang (Volkswagen Group of America, Inc., USA)

The Human-Vehicle Interface System for Integrating the Interaction based on the in-Vehicle Information Level
   Jong Woo Choi, Hye Sun Park, Jong Hyun Park, and Kyong Ho Kim (Electronics and Telecommunications Research Institute, Korea)

Youldeco - Exploiting the Power of Online Social Networks for Eco-Friendly Driving
   Christoph Endres, Jan Miksatko, and Daniel Braun (DFKI Saarbrücken, Germany)

Crossmodal Referencing as Automotive Fission Concept
   Christoph Endres and Tim Schwartz (DFKI Saarbrücken, Germany)

Pleopatra: A Semi-Automatic Status-Posting Prototype For Future In-Car Use
   Christoph Endres and Daniel Braun (DFKI Saarbrücken, Germany)

Using a Theremin for Micro-Gesture Recognition in an Automotive Environment
   Christoph Endres and Svilen Dimitrov (DFKI Saarbrücken, Germany)

Intelligent Environment Car: A New Perspective
   Christoph Endres and Sandro Castronovo (DFKI Saarbrücken, Germany)

Sharing User and Context Models in Automotive HMI
   Michael Feld and Christoph Endres (DFKI Saarbrücken, Germany)

Reduction in Fuel Consumption Depends on the Fuel Economy Display and Driver Sex: An Observed Interaction.
   Justin S. Graving, Micheal P. Manser, and Ensar Becic (University of Minnesota, USA)

The Effects of Intensity in Multi-modal Warning Systems
   Helen Harris and Clifford Nass (Stanford University, USA)

Touch Screen vs. Rotary Controller: How Usable are the Two Major In-Vehicle Information System Technologies?
   Catherine Harvey (University of Southampton, UK)

Does My Driving Scare You?
   Jennifer Healey, Georgios Theocharous, and Branislav Kveton (Intel Labs, USA)

The Investigation of Workload Management System based on Drivers' Driving Action
   Yoon Sook Hwang, Dae Sub Yoon, Jong Hyun Park, and Kyong Ho Kim (Electronics and Telecommunications Research Institute, Korea)

"i-PASSION": A Concept Car User Interface Case Study from the Perspective of User eXperience Design
   Myounghoon Jeon (Georgia Institute of Technology, USA)

Exploration of Vehicle Personality Expressed Through Motion
   Eric Kryski and Ehud Sharlin (University of Calgary, Canada)

Mitigating Mobile Phone Distractions While Driving
   Janne Lindqvist and Jason Hong (Carnegie Mellon University, USA)