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Automotive UI 2014
SEATTLE - USA

AutomotiveUI 2014

6th International Conference on Automotive User Interfaces and Interactive Vehicular Applications

in cooperation with ACM SIGCHI

September 17-19, 2014
Seattle, Washington, USA

Adjunct Proceedings

Adjunct Proceedings of the 6th International Conference on Automotive User Interfaces and Interactive Vehicular Applications (AutomotiveUI '14), Sept. 17–19, 2014, Seattle, WA, USA

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Preface

We are very pleased to introduce the Proceedings of the Sixth International Conference on Automotive User Interfaces and Interactive Vehicular Applications (AutomotiveUI'14). This is the premier forum for user interface (UI) research in the automotive domain. As with previous conferences, the papers and presentations as part of AutomotiveUI'14 addresses novel in-vehicle services, models of and concepts for enhancing the driver experience, driver performance and behavior, development of semi and fully autonomous driving, and the needs of different user groups.

An article written for the 2012 Automotive User Interface Conference (Kun et al, 2013, In *IEEE Pervasive Computing*) noted that technology would continue to be a part of the future car and that our community must be on the forefront of change as we move forward. The collection of papers that are part of this year's proceedings underscores the breadth and depth of change of in-vehicle technology. Information and entertainment that had previously been available only in our homes and offices is now available in our cars and advances in ubiquitous computing have provided us a wide selection of information and entertainment in our vehicle.

This year's proceedings includes papers on new and enhanced user interfaces that also account for the context that the interface is being used, methods and measurements for assessing automotive user interfaces, and lessons learned as we continue on the road toward the future of automated vehicles and autonomous driving.

Automotive UI'14 is hosted by the College of Engineering at the University of Washington, the home of the Pacific Northwest Regional Transportation Consortium (PacTrans), a coalition of transportation professionals and educators dedicated to the safe transport of all road users.

Submission and Review Process

Authors were invited to submit position papers for workshops, work in progress (WIP) and demonstrations in the Extended Abstract Format. There are eight workshops in total with one to 10 extended abstracts accepted per workshop. For the WIP and demonstrations, there were 37 WIP and three demonstrations submitted. All submissions received at least three independent, expert reviews. Based on the reviews, the WIP/Demonstration Chair selected 16 WIP (43%) and one contribution in the interactive demonstration category (33%) for inclusion in the adjunct proceedings. The conference was organized in cooperation with the Association for Computing Machinery (ACM), so that the proceedings and adjunct proceedings will be available through the ACM portal.

Acknowledgements

I would like to thank our sponsors for their generous financial support of the conference. Our Principal Sponsor is the University of Washington, College of Engineering (and includes the Departments of Industrial & Systems Engineering, and Civil & Environmental Engineering). The Best Paper Award is sponsored by the College of Engineering, University of Washington. Our Gold Sponsors include Intel Corporation, Toyota Collaborative Safety Research Center (CSRC), American Honda Motor Co., Inc., and Microsoft Corporation. The New England University Transportation Center (NE UTC) and the Pacific Northwest Transportation Consortium (PacTrans) each supported the conference as Silver Sponsors. We would like to also acknowledge our exhibitors: Ergoneers, Smart Eye AB, and EyeTracking, Inc.

I would also like to recognize the co-chairs for the four tracks of the conference: Papers, Work-in-Progress & Demonstrations, Workshops, and Doctoral Colloquium. These experts in our field committed a considerable amount of time to promote the conference, to organize the submission and review process, and were instrumental in making decisions for the final conference program. I would like to thank the Publication Co-Chairs, the Local Arrangements Chair, as well as the webmasters for their contributions in organizing the conference.

I also thank all the members of the Program Committee for their time and effort in evaluating the many paper submissions, work-in-process papers, and demonstrations. I would like to express my sincere gratitude for their efforts in carefully evaluating the novelty and contribution of each paper, and for providing thoughtful comments to support their evaluations.

Finally, I would like to thank the University of Washington staff and student volunteers for their help with the local organization of the conference. This includes Chun-Cheng Chang, Nicholas DiFulvio, Edith Guo, Kristen Higashi, Erika Miller, Alice Wu, Xingwei Wu, and Yuqing Wu.

Thanks again for everything. I could not have done it without all of you.

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Linda Ng Boyle, *University of Washington*

Conference Organization

General Chair

Linda Ng Boyle, *University of Washington, US*

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Huimin Xiong, University of Washington
Yan Yang, MIT

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Social, Natural, and Peripheral Interactions: Together and Separate

Organizers:
Andreas Riener, *Institute for Pervasive Computing, Johannes Kepler University Linz, Austria*
Myhounghoon Jeon, *Mind Music Machine Lab, Michigan Technological University, USA*
Bastian Pfleging, *Institute for Visualization and Interactive Systems, Stuttgart, Germany*
Ignacio Alvarez, *BMW CRM & Connected Drive, Beijing, China*
Mario Chiesa, *Istituto Superiore Mario Boella Torino, Italy*
Heiko Müller, *OFFIS – Institute for Information Technology, Oldenburg, Germany*
Andreas Löcken, *OFFIS – Institute for Information Technology, Oldenburg, Germany*

Workshop 2:

Cognitive load and In-Vehicle Human-Machine Interaction (CLW)

Organizers:
Andrew L. Kun, *University of New Hampshire, USA*
Peter Froehlich, *Telecommunications Research Center Vienna, Austria*
Bryan Reimer, *AgeLab, Massachusetts Institute of Technology, USA*
Paul A. Green, *Transportation Research Institute, University of Michigan, USA*
Peter A. Heeman, *Center for Spoken Language Understanding, Oregon Health and Science University, USA*
W. Thomas Miller, III, *University of New Hampshire, USA*
Ivan Tashev, *Microsoft Research, USA*
Shamsi Iqbal, *Microsoft Research, USA*
Thomas M. Gable, *Sonification Lab, Georgia Tech, USA*

Workshop 3:

Pointing towards future automotive HMIs: The potential for gesture interaction

Organizers:
Linda Angell, *Touchstone Evaluations, Inc., USA*
Yu Zhang, *DENSO International America, Inc., USA*

Workshop 4:

EVIS 2014 3rd Workshop on Electric Vehicle Information Systems

Organizers:
Sebastian Osswald, *Technische Universität München, Germany*
Sebastian Loehmann, *University of Munich (LMU), Germany*
Anders Lundström, *Royal Institute of Technology, Sweden*
Ronald Schroeter, *Queensland University of Technology, Australia*
Andreas Butz, *University of Munich (LMU), Germany*
Markus Lienkamp, *Technische Universität München, Germany*

Workshop 5:

Human Factors Design Principles for the Driver-Vehicle Interface (DVI)

Organizers:
John L. Campbell, *Battelle, USA*
Christian M. Richard, *Battelle, USA*
L. Paige Bacon, *Battelle, USA*
Zachary R. Doerzaph, *Virginia Tech Transportation Institute, USA*

Workshop 6:

Designing for People: Keeping the User in mind

Organizers:
JohnRobert Wilson, *User Experience (UX) Group, Fujitsu Ten Corp. of America*
Jenny Le, *User Experience (UX) Group, Fujitsu Ten Corp. of America*

Workshop 7:

2nd Workshop on User Experience of Autonomous Driving at AutomotiveUI 2014

Organizers:
Alexander Meschtscherjakov, *University of Salzburg, Austria*
Manfred Tscheligi, *University of Salzburg, Austria*
Dalila Szostak, *Google, USA*
Rabindra Ratan, *Michigan State University, USA*
Ioannis Politis, *University of Glasgow, UK*
Roderick McCall, *University of Luxembourg, Luxembourg*
Sven Krome, *RMIT University, Australia*

Workshop 8:

Wearable Technologies for Automotive User Interfaces: Danger or Opportunity?

Organizers:
Maurizio Caon, *University of Applied Sciences and Arts Western Switzerland, Switzerland*
Leonardo Angelini, *University of Applied Sciences and Arts Western Switzerland, Switzerland*
Elena Mugellini, *University of Applied Sciences and Arts Western Switzerland, Switzerland*
Michele Tagliabue, *Paris Descartes University, France*
Paolo Perego, *Politecnico di Milano, Italy*
Giuseppe Andreoni, *Politecnico di Milano, Italy*

Work in Progress

Interactive Demo