The 2nd Workshop on Localization vs. Internationalization: Impact of COVID-19 Pandemic on AutomotiveUI Activities from the View of Diversity and Inclusion

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ABSTRACT

A worldwide pandemic has brought many challenges in numerous areas of everyone's life. The AutomotiveUI 2020 has also been moved to a virtual conference. Although the situation seems to be improving in some parts of the world, the impacts that the pandemic has brought to the research and academia may last long even after the pandemic is over. In the AutomotiveUI community, there is more than one aspect that should be taken into consideration. Ironically, the situation brought about both risks and opportunities including research methods, collaboration, interaction manners, and diversity and inclusion. With this background, the goal of this workshop is to discuss the impact of the COVID19 pandemic on the AutomotiveUI community from the perspective of the diversity and inclusion and to discuss the direction of collaborative activities of our community with researchers from various groups. We will organize virtual workshop sessions three times for different time zones.

CCS CONCEPTS

• Social and professional topics ~ User characteristics ~ Cultural characteristics, Geographic characteristics

KEYWORDS

COVID-19, Pandemic, Automotive UI, Academic Activity, Diversity and Inclusion

1 INTRODUCTION

Affecting every continent in the world, the pandemic has brought many challenges in numerous areas of everyone's life. It has brought social-distancing rules in our daily lives, and many activities have become restricted not only within a country but also between countries. The pandemic has also resulted in shrinkage of academic activities of researchers. The CHI 2020 (The ACM Conference on Human Factors in Computing Systems), one of the biggest conferences in the fields of human factors and human-computer interaction, has been canceled. Also, the AutomotiveUI 2020 (the conference venue for the present workshop) has been decided to be held in the form of a virtual conference. Although the situation seems to be improving in some parts of the world, the impacts that the pandemic has brought to the research and academia may last long even after the pandemic is over. In the AutomotiveUI community there is more than one aspect that should be taken into consideration.

First, the AutomotiveUI community is a group of multidisciplinary researchers and practitioners. Many contributions are being made through the exchange of knowledge and experience of researchers and practitioners from various fields, such as psychology, human factors, human-computer interaction, UI/UX, cognitive engineering, industrial design, etc. For example, although the conference has a short history, the number of participants at the AutomotiveUI conference has sharply increased, which shows that this conference is considered as a successful venue for the academic exchanges. However, the constraints on physical exchange can lead to difficulties in interacting with researchers and practitioners from all over the world.

Second, we will face difficulties in multiple areas including research methods, collaboration and interaction manners. Many researchers and practitioners widely use empirical observation and analysis methods to scientifically explore the field of AutomotiveUI, which can be seen as a practical area. For example, analysis on naturalistic driving data [2,3], observations on drivers' behaviors in a driving simulator [1,4,5,8], evaluations and tests on actual user interfaces and interactions [6,7], and interviews with drivers or experts as a focus group [9,11] have been widely used. However, if we have to keep following social-distancing, it will be difficult to collect and analyze empirical data from real users as we have done so far.

However, fortunately and ironically, there are also some opportunities and potential benefits from this situation. With the power of digitalization and communication technologies, we are able to continue to hold meetings and communications via virtual conferencing. By considering alternative methods and adjusted contents such as virtual conferences, there is a possibility for greater inclusion of researchers from all over the world. According to Lee et al. [10], the participants from five countries account for over eighty percent at the AutomotiveUI conference from 2016 to 2018. However, if we can successfully promote a virtual conference, many researchers, for whom it has been difficult to participate in academic activities because of location, timing, or financial issues, can now be included.

Online communication tool providers had to significantly improve their capabilities in the months of February and March 2020, when almost all communication, education and plenty of other services moved online overnight. This has forced providers such as Zoom, Google, etc. to rethink their services and increase the number of participants allowed in one session, to add possibilities such as "Rise hand" for questions, create separate chats and video call within a group chat/call, etc., all with the purpose of meeting the needs of users in the virtual environment as they would in a real world conference meeting. Consequently, this situation could also be considered for discovering and creating new opportunities in terms of new research methods, where researchers can leverage online techniques to access more potential online users and test subjects. One of the key focuses of each research design is how to answer the chosen research question while taking into consideration the limitations of the testing environment, available resources and available test subjects. Simulation is a common approach in the automotive research community, and so, new digitized research approaches that consider remote participation could significantly enhance the access to diverse test populations and increased the number of test subjects.

From this background, this workshop aims to discuss the impact of the COVID19 pandemic on the AutomotiveUI community from the perspective of the diversity and inclusion and to discuss the direction of academic activities of our community with researchers from various groups. This is the second diversity and inclusion workshop, following the successful workshop last year. Thirty-five participants from 9 countries (Australia, USA, Korea, Japan, China, India, Slovenia, Netherlands, and Germany) took part in the workshop. The number of participants was the biggest among the workshops, which shows that many participants in the AutomotiveUI conference are interested in this topic. Last year, we discussed standardization and localization, legal/legislation issues, infrastructure, social/cultural issues and differences, drivers' behavior and characteristics, etc. in both manual and automated driving contexts. This year, we will narrow down the topic with a focus on the current pandemic situation. Specific research questions (RQs) are as follows.

- RQ1. Can a virtual conference widen diversity and inclusion in the AutomotiveUI community?
- RQ2. How to design an international virtual conference that enables active participation of researchers and practitioners from different countries in different time zones?
- RQ3. How to foster remote collaborations from different regions?
- RQ4. How should the experimental design be carried out in situations where physical participation of subjects is restricted?
- RQ5. What can be novel research methods and approaches in this pandemic situation?
- RQ6. What are the attributes that affect the research/collaboration when moving from physical to virtual environment?
- RQ7. What are the attributes for expanding diversity and inclusion which are specific to automotive UI?
- RQ8. How can the attributes from RQ6 and RQ7 impact research outside automotive UI?

2 SCHEDULE & ACTIVITY

The tentative schedule of the workshop is presented in Table 1.

Session structure. The workshop will run through at least three different time zones. We will have three separate sessions for each time zone, however, the format of each session will be the same. To enrich the discussion, the results from the previous sessions will be tossed to the next sessions.

Introduction. The workshop schedule begins with an introduction to the topics. At sessions 2 & 3, a brief summary of the discussion from the previous sessions will be also presented.

Position paper presentations. Some guest speakers from different backgrounds will be invited to present topics of interest. They will present their works with the PechaKucha style (30 seconds presentation for each slide; around 3 minutes). The number of presentations and distributions to the session will be decided considering the schedule.

Group discussion & Presentation. After the invited presentations, a group discussion will be conducted to discuss the research questions. We will designate one or two topics to discuss for each group.

Table 1. The tentative schedule of the workshop

Sessions	Time	Activities
Sessions (Three successive sessions depending on time zones)	Introduction (0:00 – 0:10)	- Opening and Introduction to the topics - Summary of the group discussion from previous sessions
	Guest speaker presentations (0:10 – 0:20)	- 1 – 2 presentations from invited speakers - 3 to 5 minutes per presentation
	Group Discussion (0:20 – 0:50)	- Group discussion for the topics
	Presentation (0:50 – 1:00)	- Presentation for the discussion

3 ATTENDANCE

We estimate at least, 30 participants in total in our workshop (5 attendees per organizer). In addition to the regular AutomotiveUI attendees, we will specifically reach out and invite researchers who have never participated in AutomotiveUI from different regions and cultures.

4 EXPECTED OUTCOMES

The tangible results will be a list of issues that are related to research questions. As we are planning to recruit people from various groups as participants, we expect to get various results from different perspectives even on the same topics.

Following the workshop, we will collect and analyze data from the group discussions. Our final goal is to document the outcomes from the workshop to share the results with those who are interested in this topic and to diffuse discussions on this topic. The documented manuscript will be prepared for the publication in a relevant conference or journal (e.g., AutomotiveUI 2021 conference, work-in-progress session). All the discussion outcomes will be directly used to prepare and promote the AutomotiveUI 2021 Conference.

5 SUPPORT REQUESTS

No specific hardware or software is requested for this workshop. We plan to use Zoom if the conference does not provide/require any other platforms for the workshop

6 BIOGRAPHIES

Seul Chan Lee is an Assistant Professor of the Department of Industrial and Systems Engineering at Gyeongsang National University. His research goal is to explore what user's needs and requirements, to evaluate system artifacts, and to make systems and devices better based on the theories and methodologies of Human Factors and Human-Computer Interaction.

Kristina Stojmenova is a Research Associate at the Faculty of electrical engineering at University of Ljubljana. Her field of research is human-computer interaction in in-vehicle information systems, and the main focus of her work is driver behaviour and assessment of driver's cognitive load.

Gowdham Prabhakar is a Research Scholar at Center for Product Design and Manufacturing (CPDM), Indian Institute of Science (IISc). His research focuses on investigating modalities of interaction with In-Vehicle Infotainment Systems and detecting distraction of drivers in automotive. He is also working in fields of HCI for aviation, robotics and music.

Shan Bao is an Associate Professor of the Department of Industrial and Manufacturing Systems Engineering at University of Michigan-Dearborn, and an associate research scientist at University of Michigan Transportation Research Institute. Her HFET (Human Factors and Emerging Technologies) Lab seeks to understand and enhance Human, System, and Environment interactions by applying Human Factors theories, design principles and employing analytic data science approaches.

No specific hardware or software is requested for this workshop. We plan to use Zoom if the conference does not provide/require any other platforms for the workshop

Jaka Sodnik is a Professor at the Faculty of Electrical Engineering, University of Ljubljana. He is an active researcher and supervisor in the fields of human-machine interaction, web technologies and acoustics. His early research focused on the analysis and generation of spatial sound and its use in human-machine interaction, and he was involved in several research projects in the field of virtual and augmented reality.

Myounghoon Jeon is an Associate Professor of the Department of Industrial and Systems Engineering and the Department of Computer Science at Virginia Tech. His Mind Music Machine Lab conducts human-automation (vehicles, robots, and agents) interaction research with a focus on affect, audio, and accessibility. He serves as the diversity & inclusion co-chair at AutoUI2020.

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