

Multi-Cultural Human-Robot Interaction Workshop

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ABSTRACT

This hands-on workshop brings together researchers and practitioners to discuss the cultural aspects of Human-Robot Interaction design. An increasing body of work [2–4, 7] shows that the one-fits-all model of interaction might be obsolete, especially when considering natural interactions where people use gesture and voice that are culturally dependent [6]. In the first part of the workshop, each attendee will present their accepted position paper on the topic. As a group, we will discuss ideas around social robot designs and leverage everyone’s expertise to discuss cultural aspects when designing effective and enjoyable interactions. We encourage the exchange of research results and ideas for future research attempts. The second part of the workshop will be a hands-on activity involving a participatory design task for a cross-cultural robot. The workshop goal is to develop a road-map for cross cultural interactions with robots.

CCS CONCEPTS

• **Human-centered computing** → **HCI design and evaluation methods; Interaction design process and methods**; Collaborative and social computing design and evaluation methods; • **Computer systems organization** → *Robotics*;

KEYWORDS

Multi-cultural, human-robot interaction, social robot, uav, drone

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1 BACKGROUND

An increasing body of research in Human-Computer and Human-Robot Interaction highlights cross-cultural differences in terms of how people behave with technology [4, 7]. For instance, some of our prior work shows that there are significant differences in how people naturally interact with a flying robot [1, 2]. While most of the world’s technology is being developed in the US and China “Silicon Valleys”, it becomes primordial to think about how people actually want to interact with technologies and whether cultural models need to be taken into consideration.

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In this workshop we propose to discuss topics around the multi-cultural aspects of human-robot interaction, focusing on the example of a social robot. AfriCHI is an exceptional venue for this workshop as it is a truly multi-cultural conference with researchers and attendees that are sadly often under-represented in SIGCHI conferences. We believe that running this workshop in Namibia will be an incredible opportunity to think outside the box in terms of interaction and future applications. This hands-on workshop will bring together human-computer interaction researchers and practitioners to exchange ideas and discuss results and methodologies about the future of cross-cultural human-robot interactions. The workshop’s objectives are as follow:

- (1) Bring together a community of researchers interested in cross-cultural design and interaction
- (2) Have researchers present their ideas and receive feedback on their work
- (3) Develop novel concepts and methodologies for multi-cultural HRI using a participatory design activity.
- (4) Establish a road-map of for cross-cultural technology design and explore future collaborations.

The workshop’s results will be submitted to a top-tier conference and attendees will be invited to collaborate on the research paper.

2 ORGANIZERS

Ms. Anna Wojciechowska is a research assistant in the Ubiquitous Computing Lab and a graduate of the Interactive Communications program at IDC Herzliya. Anna’s research focuses on Human-Drone Interaction and in particular how people can interact with these new technologies when they are collocated. One of her recent project investigated how a drone can approach a person in a non-threatening manner to initiate interaction. She is currently concentrating her efforts on understanding whether the robotics “Uncanny Valley” concept is applicable to flying robots (a.k.a. drones) and how the look and feel of the drones affect people’s perception and expectations.

Dr. Jessica Cauchard is an assistant professor of Computer Science and the director of the Ubiquitous Computing Lab at the Interdisciplinary Center (IDC) Herzliya in Israel. Her research focuses on the design, development, and evaluation of interaction techniques for novel devices such as wearables and robots. Prior to joining IDC Herzliya as a faculty member, Jessica was a post-doctoral research fellow at Stanford University and Cornell Tech. She was awarded a PhD at the University of Bristol in 2014. Jessica ran several workshops on HCI and design at academic conferences and at the Grace Hopper conference. She has also served on several conference organizing committees, such as being demonstration chair for CHI’18 and workshop chair for MobileHCI’18.

3 WEBSITE

The website: <https://culturaldrones.wixsite.com/welcome> contains the following information regarding the workshop:

- Description including aims and objectives.
- Call for papers, important dates, and instructions to submit.
- Workshop Program.
- Keynote speaker and Organizers' biography.
- Position Papers.

4 PRE AND POST WORKSHOP PLANS

The section below describes our pre-workshop plans.

4.1 Upon Acceptance

- Create workshop submission email
- Finalize website
- Invite keynote speaker
- Advertise workshop via multiple media:
 - (1) Mailing lists: CHI-ANNOUNCEMENTS@listserv.acm.org, PHD-DESIGN@jiscmail.ac.uk, BCS-HCI@jiscmail.ac.uk, and annonces@afihm.org.
 - (2) Contacting local researchers: Namibia University of Science and Technology, University of Namibia.
 - (3) Contacting authors and attendees of AfriCHI.
 - (4) Facebook groups: ACM SIGCHI, CHI Meta, CHI Women, and AfriCHI.

4.2 After Submission Date

- Review submitted papers
- Send out notifications to author and instructions for camera ready
- Upload papers to the website

4.3 Before the Conference

- Confirm room and equipment needs with the workshop chairs
- Finalize workshop activity and program of the day

4.4 After the Conference

- Send email to all attendees with workshop notes
- Invite attendees to collaborate on research paper using the workshop activity's outcomes. Venues such as ACM CHI or ACM/IEEE HRI conferences will be considered.
- Write up white paper and research road-map on multi-cultural human-robot interaction to be made available to all attendees and potentially disseminated through Communications of the ACM.

5 WORKSHOP STRUCTURE

This workshop is designed to allow for participants to discuss topics and work together on a design activity to bring creativity in the process. The day will start with the organizers introducing themselves, the workshop format and the aims of the day. It will then move to individual presentations from the attendees who submitted position papers. There will be around 10 minutes per presentation, and 2

Start	End	Activity
9.00am	9.30am	Introduction of the organizers and the aim of the workshop
9.30am	10.30am	Participants present their paper to the audience, including some time for Q&A
10.30am	11.00am	Break
11.00am	12.30pm	Participants present their paper to the audience, including some time for Q&A
12.30pm	2.00pm	Workshop lunch
2.00pm	2.40pm	Participatory Design group activity
2.40pm	3.30pm	The groups present their findings
3.30pm	4.00pm	Break
4.00pm	4.30pm	Assessment of findings
4.30pm	5.00pm	Discussions
5.00pm	5.30pm	Wrap up and take-away message
6.30pm		Workshop Dinner (Optional)

minutes for questions and answers for each position paper. A workshop lunch will allow attendees to continue their conversations from the morning session. After lunch, we will facilitate a group activity around designing prototypes of a social Unmanned Aerial Vehicles (UAV). We will provide various types of displays, sensors, and materials to build prototypical applications. At the end of the activity, each group will be given time to present their findings. After the activity, we will start a discussion on findings and take away messages. The potential future research areas will be addressed with the aim of forming collaborations amongst participants. The proposed schedule is as follows:

6 PARTICIPATORY DESIGN ACTIVITY

In addition to the traditional workshop format where attendees present their work, we propose a hands-on activity. This participatory design activity leverages on participants' expertise, as HCI researchers and practitioners, as well as on their creativity and their own personal experience with technology. We aim to understand how people of diverse cultures and backgrounds come together to envision a cross-cultural social robot. Participants will be split into groups of 3 to 4 people. We will provide design materials with the intention of sketching and prototyping. Attendees will start with a short and fun warm-up game to get them into the open and creative mindset. This participatory design activity is built on prior research on designing a social robot [5].

We will give a series of instructions, each followed by short design sprints where attendees will solve the task alone or in team. They will be asked to brainstorm physical features, applications, interactions expected of a social robot, and future use cases. Collectively, they will determine which of the features are the most important ones, and help determine what a social robot is and what it looks like. Attendees will then be given evaluation tools to better understand their designs and situate them culturally. Each team will then present their results and share their findings with the whole group. We will encourage attendees to continue the work started over the workshop afterwards.

7 AUDIENCE

The workshop is targeting researchers and practitioners from the Human-Computer Interaction research community. We also want to involve the local youth and invite several local students and/or teenagers to participate to the workshop and the hands-on activity. AfriCHI is a special venue to hold this workshop as it brings together researchers from all over Africa who are often under-represented in international SIGCHI conferences. We will focus on bringing together attendees from diverse cultural and educational backgrounds and would like to attract 5-7 strong position papers and a total of 20 attendees.

8 CALL FOR PARTICIPATION

We are pleased to invite you to participate to this one-day workshop on Multi-Cultural Human-Robot Interaction, held on December 3rd 2018 as part as the AfriCHI conference in Windhoek Namibia. We invite you to participate in this workshop by submitting a position paper at the latest on October 1st. About the workshop: This hands-on workshop brings together researchers and practitioners to discuss the cultural aspects of Human-Robot Interaction (HRI) design. Recent work shows that the one fits all model of interaction might be obsolete, especially when considering natural interactions where people use gesture and voice, that are culturally dependent. In the first part of the workshop, each attendee will get a chance to present a position paper on the topic. We will discuss ideas around social robot designs and leverage everyone's expertise to discuss cultural aspects when designing effective and enjoyable interactions. We encourage the exchange of research results and ideas for future research attempts. The second part of the workshop will be a hands-on activity involving a participatory design task for a cross-cultural robot.

Call for participation: In order to be admitted to the workshop, the participant should write a 2-4 page position paper following the SIGCHI Extended Abstracts format (<https://sigchi.org/templates/>) and submit it before September 30th, 2018 to: cultural.drones@gmail.com. We embrace proposals from a large variety of subjects and domains. Examples of topics include but are not limited to:

- Cross-cultural differences and similarities in HRI
- Challenges and Implications of HRI
- Design aspects of social robots
- Acceptability and Social Norms
- Values, Ethics, and Policies
- Novel enabling technologies
- I/O techniques for HRI
- Future applications for social robots

More Information: <https://culturaldrones.wixsite.com/welcome/>
Workshop organizers: Ms Anna Wojciechowska and Dr. Jessica Cauchard (IDC Herzliya, Israel).

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