

# 2nd Workshop on Evaluating Child-Robot Interaction

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**Abstract**—Many researchers have started to explore natural interaction scenarios for children. No matter if these children are normally developing or have special needs, evaluating Child-Robot Interaction (CRI) is a challenge. To find methods that work well and provide reliable data is difficult, for example because commonly used methods such as questionnaires do not work well particularly with younger children. Previous research has shown that children need support in expressing how they feel about technology. Given this, researchers often choose time-consuming behavioral measures from observations to evaluate CRI. However, these are not necessarily comparable between studies and robots.

This workshop aims to bring together researchers from different disciplines to share their experiences on these aspects. The main topics are methods to evaluate child-robot interaction design, methods to evaluate socially assistive child-robot interaction and multi-modal evaluation of child-robot interaction.

Connected questions that we would like to tackle are for example: i) What are reliable metrics in CRI? ii) How can we overcome the pitfalls of survey methods in CRI? iii) How can we integrate qualitative approaches in CRI? iv) What are the best practices for in the wild studies with children? Looking across disciplinary boundaries, we want to discuss advantages and shortcomings of using different evaluation methods in order to compile guidelines for future CRI research. This workshop is the second in a series that started at the International Conference on Social Robotics in 2015.

## I. OVERVIEW OF THE WORKSHOP

### A. Format types of activities and schedule

The 2nd workshop on evaluating child robot interaction workshop is a full-day workshop. We include time for discussion after presentations of invited speakers and assuming we have the time, for discussion after all the respective presentations. Our schedule also includes a poster session based on submitted position papers, which we deem a good way for participants of the workshop to get in touch with each other. For the afternoon, we plan a moderated session where we will steer the discussion based on a common goal, namely to work towards a document that outlines the researchers' experiences with the topic of evaluating child-robot interaction. Our goal is to make sure that all participants in this session get a chance to share their insights. Depending on the group size,

TABLE I  
TENTATIVE SCHEDULE OF THE WORKSHOP

Time	Topic
9:00/10:00	Welcome/Introduction
10:00/10:45	Invited Speakers: Brian Scasellati
10:45/11:00	Coffee Break
11:00/11:45	Poster Spotlight
11:45/13:00	Poster Session
13:00/14:00	Lunch
14:00/14:45	Invited Speaker: Takayuki Kanda
14:45/15:00	Coffee Break
15:00/16:00	Kick-off discussion
16:00/17:00	Breakout sessions/Document generation
17:00/18:00	Closing discussion and action points for future research

this will include breakout sessions. A tentative schedule of the workshop is presented in table I.

### B. Topics

We welcome topics related to different child-robot interaction applications (e.g., education, assistance, health-care, rehabilitation, entertainment), different research areas (e.g., evaluating child-robot interaction focusing on cognitive development, designing and evaluating robot behaviors for child-robot interaction, multiparty child-robot interaction in play settings, evaluating child-robot engagement), different methodologies (e.g., qualitative, quantitative, mixed methods) and different evaluation tools. In particular, we are interested in soliciting contributions concerning new approaches and best practices in evaluating child-robot interaction.

## II. TARGET AUDIENCE

The target audience includes researchers working on the topic of HRI (and possibly HCI) for and with children. We invite people with all kinds of backgrounds that face the

challenges of building and evaluating robots for children. Willingness and interest to reflect on the methodological challenges of child-robot interaction is the only prerequisite to participate in the workshop.

### III. POSITION PAPER REQUIREMENTS

We accept submissions of position papers up to 4 pages (A4) including references. The submissions must be submitted in PDF format and they should conform to the HRI Late Breaking Report template. Authors' names and affiliations are required. Submissions will be selected on the relevance of the contribution in regard to the potential to generate interesting discussion at the workshop. The goal of the workshop is to discuss advantages and shortcomings of using different evaluation methods in order to compile guidelines for future CRI research. Therefore, in the papers, the authors should reflect on the following aspects:

- Details about the project(s) that the authors work on, like: what robots do the authors work with? How old are the children that the authors work with? Do the authors' work focus on typically developing or non typically developing children? What is the goal of the project?;
- Methods that the authors use, like: qualitative or quantitative;
- Metrics, tools, toolkits that the authors use;
- Best practices;
- Challenges that the authors face when using these methods;
- Solutions developed to address these challenges;

### IV. PLAN TO DOCUMENT THE WORKSHOP

To document the results of the workshop, we are considering a special issue for the Journal of Human Robot Interaction. This special issue will contain contributions from the 1st and the 2nd Workshop on Evaluating Child Robot Interaction. Furthermore, we will make the workshop proceedings accessible online on the workshop website <sup>1</sup>.

### V. ORGANIZERS

The following people are the organizers of the 2nd Workshop on Evaluating Child Robot Interaction:

- **Cristina Zaga** Cristina Zaga is a PhD candidate at the Human Media Interaction group at University of Twente. Her research interests include human-robot interaction design, especially child-robot interaction design and evaluation methods. In her PhD she aims to explore how a robot can actively participate in collaborative tasks with groups of children.
- **Vicky Charisi** Vicky Charisi is a post-doctoral researcher at the Human Media Interaction group at University of Twente. Her research interests include developmental aspects of child-robot interaction in formal and informal settings, evaluation methods and childrens perspectives and attitudes towards robots. Currently her focus lies on

child-robot collaboration in shared physical workspaces and creative activities.

- **Vanessa Evers** Vanessa Evers is a full professor of Computer Science at the University of Twente Human Media Interaction group and Director of the DesignLab for multidisciplinary research. Her research interests focus on interaction with intelligent and autonomous systems such as robots or machine learning systems as well as cultural aspects of Human Computer Interaction. Vanessa is an editor for the International Journal of Social Robotics, she is co-chair of the ACM International Human Robot Interaction Steering Committee and Associate Editor of the Human Robot Interaction Journal.
- **Marc Neerinx** Mark Neerinx is full professor in Human-Centered Computing at the Delft University of Technology, and principal scientist at TNO Perceptual and Cognitive Systems. He has extensive experience in fundamental and applied research on HRI, among other things in the domains of health, work and security. (e.g., in the Horizon2020 project PAL, Personal Assistant for healthy Lifestyle).
- **Takayuki Kanda** Takayuki Kanda is a Senior Research Scientist at ATR Intelligent Robotics and Communication Laboratories, Kyoto, Japan. He received his B. Eng, M. Eng, and Ph. D. degrees in computer science from Kyoto University, Kyoto, Japan, in 1998, 2000, and 2003, respectively. His research interests include human-robot interaction, interactive humanoid robots, and field trials.
- **Iolanda Leite** Iolanda Leite is an Associate Research Scientist at Disney Research, Pittsburgh. Prior to that, she was a Postdoc at the Yale Social Robotics Lab, conducting research within the NSF Expedition on Socially Assistive Robotics. She received her PhD in Information Systems and Computer Engineering from University of Lisbon in 2013. Her main research interests lie in the areas of Child-Robot Interaction, Artificial Intelligence and Affective Computing.

### ACKNOWLEDGMENT

The authors would like to thank all the members of the program committee for their help and Manja Lohse for starting up this workshop.

<sup>1</sup><https://evaluatingchildrobotinteraction.wordpress.com>