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Advancing Computing as a Science & Profession



CHI22

CHI'22

Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems

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**Association for
Computing Machinery**

Advancing Computing as a Science & Profession

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General Chairs' Welcome

Welcome to CHI2022! This is the first fully hybrid CHI, and our return to in-person meetings after two years of a global pandemic. Our theme has been “Cultivating Communities”, and over the past two years of planning for this conference we’ve seen how important our communities are, and how fragile they can be. We specifically picked the term “communities” because we also understand that CHI comprises diverse communities, and that it is a privilege for CHI to have them all come together for a few days to exchange high-level ideas and advance the field in various directions, all aiming at a better future with technology.

Our focus for this conference has been to find ways to connect people in spite of their physical separation. It’s been to truly think about the pros and cons of “hybrid” conferences. Our additional goal has been to think about what belonging to our communities means, and how we can nurture that sense of belonging for all people. The conference this year is a grand experiment for us all, and while we are sure there will be friction and problems, we are as sure that the people of CHI will overcome them, will insist on future improvements, and will continue to drive innovation. If we decide that hybrid conferences are in our future, we’ll all need to think about new processes, new methods of generating revenue, and new systems to support our activity.

We are proud to have pioneered a papers revision process for CHI2022. The scale of CHI has always made the revision process for papers seem daunting, but this year with feedback from the CHI Steering Committee (which is composed of past general, technical, and papers chairs) and some thoughtful leadership by our own papers chairs we were able to design a process by which some people could submit papers, receive feedback, and resubmit those papers in the same cycle. For a first step, we are very happy with the results. Future conferences will iterate on this process, and over time we will find a process that balances our desire for both speed of publication and quality of feedback and research. But the barrier has been broken, and now CHI has a future with a revise and resubmit process.

This CHI has drawn volunteers from an open call. One of our major goals this year was to create new processes for equity and justice in our community. We established the Equity, Justice and Accessibility roles as “executive” level positions, so those advocates could be part of every conversation and every decision involving the conference. We conducted an open call for volunteers for almost all leadership positions within the conference – and staffed most roles out of that open call. The only exceptions were for roles that required significant experience or technical knowledge. Consequently, we were able to place many people into content leadership roles for the first time.

We want to be good guests in New Orleans. This is a fantastic city that has shown resilience in the face of disaster. This city is also one of the most important cities in the country, with an amazing cross-cultural and multilingual heritage. To be good guests and support the city, we have sourced non-profit organizations for our members to donate to, we’ve invited local artisans to sell their merchandise directly in our exhibit hall, we’ve prioritized local, Black-owned businesses whenever possible for making purchases, and have worked closely with our local arrangement chairs and people at the convention center to recommend experiences that will enable people to get to know the multiple facets of this city.

We are very excited for those able to be in-person that they get to experience the Crescent City. It has been shaped by French, Spanish, West African, and Native American cultural roots. It has also been shaped by colonialism, slavery, civil war, natural disasters, and multiple pandemics. Through all of this, it has turned turmoil and pain into art and culture. It’s a city that is proud of itself and how it has endured. If you get a chance to be there, check our lists of restaurants and cultural experiences. If you’re participating online, we’ll be sharing some of our favorite content related to NOLA, including music, movies, and recipes.

The role of every CHI organizing team is to innovate to improve the conference, while also preserving what has worked in the past. We are continuing the focus of past CHIs in considering our carbon footprint - thinking about locally sourced products at the conference, reducing mailings and printed materials in general, buying recycled products when available. We also see the hybrid conference as a major step towards more sustainable practices, and it enables people to advance their careers through the conference without having to make the flight to the conference to do so.

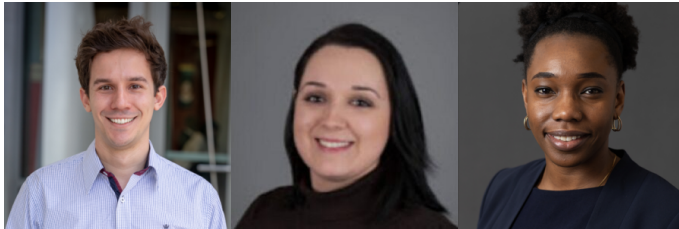
Years of planning go into every CHI. We started this process in 2019, well before the COVID-19 pandemic. The conference operates on a multi-year scale, which is easy to forget when one is actually attending it. For instance, when we came on in 2019, the conference city and dates had already been selected by the Steering Committee, as contracts for spaces like convention centers often book many years ahead of schedule. The up-side of this multi-year scale is that we continue to learn and grow - and planning this hybrid conference has taught us many valuable lessons.

We want to thank the dozens of people who served as organizers for this conference. Given the uncertainty of hybrid, in many cases we were asking them to organize two CHI conferences, when often organizing one is already seen as a challenge. This was a ludicrous request to make, and these chairs all delivered spectacularly. There are too many of them to name here, but they forever have our gratitude for their service, for their thoughtfulness, and for their passion in making CHI the best it can be.

If we've all learned something in the past few years, it's that nothing is certain. At various times in our organizing process we didn't know what the course of the pandemic would look like. We didn't know how people would respond to the hybrid options, or to the changes we were making to the conference. But the other thing we've learned from the pandemic is to be grateful for that which endures. Like New Orleans has endured its natural and manmade disasters, CHI will endure and thrive. This is because of you – the person willing to submit to the conference, to review papers, to organize a venue, to advocate for others, to find reviewers, to present their work or to listen to the work of others. In other words, our communities are what we are grateful for. Thank you and laissez les bons temps rouler!



Cliff Lampe (*University of Michigan, USA*)
Simone Barbosa (*PUC-Rio, Brazil*)
General Chairs, CHI 2022



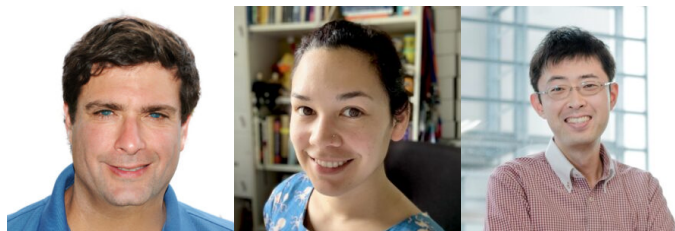
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Papers Chairs' Welcome

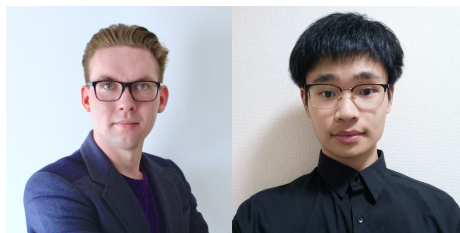
Creating the papers program for CHI is a huge effort, involving so much work from so many volunteers, and often we forget to appreciate and acknowledge this critical work in our community. Therefore, we would like to acknowledge the work of more than 600 people who accepted the invitations and acted as sub-committee chairs (SCs), associate chairs (ACs) and assistants to the SCs who did the tremendous work of recruiting, coordinating, and organizing reviewers for the papers program for CHI 2022. In total, the CHI 2022 papers track had 45 SCs, 466 ACs, and 2678 reviewers who read, reviewed and coordinated 2579 submissions organized into 22 split sub committees.

We hope that you appreciate the program and remember to say thank you when you meet one of the many people who took time out of their already busy schedule to make sure that CHI 2022 has an amazing program.

Enjoy.



Steven Drucker (*Microsoft Research, USA*)
Julie Williamson (*University of Glasgow, UK*)
Koji Yatani (*University of Tokyo, Japan*)
Papers Chairs, CHI 2022



Nikita Samarin (*University of California, Berkeley, USA*)
Zhongyi Zhou (*University of Tokyo, Japan*)
Assistants to the Papers Chairs, CHI 2022

Technical Program Chairs' Welcome

After 44 fully virtual events (14 courses, 29 workshops and 1 symposium) happen mid-April, the onsite-hybrid CHI 2022 conference will kick off with a weekend packed with 18 workshops, 1 symposium, and the doctoral consortium. The main conference will run from Monday to Thursday across more than 15 parallel sessions that will include papers, panels, journal presentations, case studies, special interest groups, courses, alt.chi, and the popular student research, student game and student design competitions. This year, most technical sessions are truly hybrid and will include live presentations and Q&As from both remote and onsite authors. Most pieces of technical content also feature a pre-recorded video that will be available on the conference platform, allowing attendees to watch content and ask questions asynchronously.

This comprehensive program is included in the Proceedings and Extended Abstracts of the conference. As with previous years, there are two fundamental categories of contributions that go to the ACM Digital Library: Papers and Extended Abstracts. Papers are the most rigorously peer reviewed and are considered the most prestigious material presented at the conference. The remaining categories of work are collected in the Extended Abstracts. These include juried and curated contributions, evaluated by experts in the field, and reflect the breadth of research, design, education, artistic, scientific exploration and engineering activity within the HCI community.

Making this program possible was a challenging and rewarding experience, involving the work of thousands of volunteers. For papers, we received 2,579 submissions (the 2021 conference received 2,845) which were rigorously reviewed, resulting in 637 accepted papers at a 24.7% acceptance rate. At CHI this year, we will also have 258 late-breaking works from 722 submissions; 15 alt.chi from 34 submissions; 39 interactivity works from 61 submissions; 33 case studies from 96 submissions; 50 workshops/symposia from 81 submissions; 13 SIGs from 23 submissions; 10 panels from 19 submissions; and 27 courses from 28 submissions. In addition, 58 journal papers will be presented at the conference. Finally, we will have 23 students presenting their work at the doctoral consortium from 40 submissions; 9 student research competition works from 15 submissions; 7 student game competition works from 11 submissions; and 8 student design competition works from 20 submissions.

The most important change this year is that the selection of CHI papers included a revise and resubmit phase to the review process. This was organized in two rounds, giving some authors the opportunity to submit a revised version of their manuscript after having received feedback from reviewers. The interactivity chairs also invited authors of demos that were already published in the proceedings of an ACM conference but that had never got the chance to be presented as live, on site demos due to the pandemic. These demos are not included in these proceedings as they do not have a new entry in the ACM Digital Library but they will run live in the New Orleans Convention Center.

As always, we would like to warmly thank the members of the conference organizing committee, the members of the program committee who wrote many reviews and discussed papers at length, and the abundance of external reviewers across many of the conference tracks. In total, 11,199 reviews were written for the CHI papers track alone. We would like to thank the SIGCHI Operations team for processing and uploading all of the talk videos and previews across most of our content. We also wish to very sincerely thank our CHI Publications team. They have made a tremendous amount of work, and the production of these proceedings would never have been possible without them.

Finally, thanks to everyone who contributed to the program – your work is highly appreciated! We hope you enjoy the technical program and that it inspires you!



Caroline Appert (*Université Paris-Saclay, France*)
David A. Shamma (*Toyota Research Institute, USA*)
Technical Program Chairs, CHI 2022



Dominic DiFranzo (*Lehigh University, USA*)
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Kenneth Holstein (*Carnegie Mellon University*)

Paper53: Telling Stories from Computational Notebooks: AI-Assisted Presentation Slides Creation for Presenting Data Science Work

Chengbo Zheng (*Hong Kong University of Science and Technology*)
Dakuo Wang (*IBM Research*)
April Wang (*University of Michigan*)
Xiaojuan Ma (*Hong Kong University of Science and Technology*)

Paper54: Human-AI Collaboration via Conditional Delegation: A Case Study of Content Moderation

Vivian Lai (*University of Colorado Boulder*)
Samuel Carton (*University of Colorado Boulder*)
Rajat Bhatnagar (*University of Colorado Boulder*)
Q. Vera Liao (*IBM Research*)
Yunfeng Zhang (*IBM Research*)
Chenhao Tan (*University of Chicago*)

Papers: Voice, Conversation and Design

- Paper55: Unpacking Practitioners' Attitudes Towards Codifications of Design Knowledge for Voice User Interfaces**
Krishika Haresh Khemani (*University of Nottingham*)
Stuart Reeves (*University of Nottingham*)
- Paper56: Designing for Speech Practice Systems: How Do User-Controlled Voice Manipulation and Model Speakers Impact Self-Perceptions of Voice?**
Lisa Orii (*University of Washington*)
Nami Ogawa (*The University of Tokyo*)
Yuji Hatada (*The University of Tokyo*)
Takuji Narumi (*the University of Tokyo*)
- Paper57: Great Chain of Agents: The Role of Metaphorical Representation of Agents in Conversational Crowdsourcing**
Ji-Youn Jung (*Delft University of Technology*)
Sihang Qiu (*Delft University of Technology*)
Alessandro Bozzon (*Delft University of Technology*)
Ujwal Gadiraju (*Delft University of Technology*)
- Paper58: "Rewind to the Jiggling Meat Part": Understanding Voice Control of Instructional Videos in Everyday Tasks**
Yaxi Zhao (*University of Toronto*)
Razan Jaber (*Stockholm University*)
Donald McMillan (*Stockholm University*)
Cosmin Munteanu (*University of Toronto Mississauga, University of Toronto*)
- Paper59: "A Voice that Suits the Situation": Understanding the Needs and Challenges for Supporting End-User Voice Customization**
Hyeon Jeong Byeon (*Ewha Womans University*)
Chaerin Lee (*Ewha Womans University*)
Jeemin Lee (*Ewha Womans University*)
Uran Oh (*Ewha womans university*)

Papers: Interaction Schemes and Patterns I

- Paper60: Monitoring Screen Time or Redesigning It? Two Approaches to Supporting Intentional Social Media Use**
Mingrui Zhang (*University of Washington*)
Kai Lukoff (*University of Washington*)
Raveena Rao (*University of Washington*)
Amanda Baughan (*University of Washington*)
Alexis Hiniker (*University of Washington*)
- Paper61: Squeezy-Feely: Investigating Lateral Thumb-Index Pinching as an Input Modality**
Martin Schmitz (*Technical University of Darmstadt*)
Sebastian Günther (*TU Darmstadt*)
Dominik Schön (*TU Darmstadt*)
Florian Müller (*LMU*)
- Paper62: The Digital Landscape of Nudging: A Systematic Literature Review of Empirical Research on Digital Nudges**
Kristoffer Bergram (*University of Neuchâtel*)
Marija Djokovic (*University of Neuchâtel*)
Valéry Bezençon (*University of Neuchâtel*)
Adrian Holzer (*University of Neuchâtel*)
- Paper63: Design is Worth a Thousand Words: The Effect of Digital Interaction Design on Picture-Prompted Reminiscence**
Benett Axtell (*University of Toronto*)
Raheleh Saryazdi (*University of Toronto*)
Cosmin Munteanu (*University of Toronto Mississauga, University of Toronto*)

Paper64: Understanding Multi-Device Usage Patterns: Physical Device Configurations and Fragmented Workflows

Ye Yuan (*Microsoft Research, University of Minnesota*)
Nathalie Riche (*Microsoft Research*)
Nicolai Marquardt (*Microsoft Research, University College London*)
Molly Jane Nicholas (*Microsoft Research, UC Berkeley*)
Teddy Seyed (*Microsoft Research*)
Hugo Romat (*Microsoft*)
Bongshin Lee (*Microsoft Research*)
Michel Pahud (*Microsoft Research*)
Jonathan Goldstein (*Microsoft Research*)
Rojin Vishkaie (*Arizona State University*)
Christian Holz (*ETH Zürich*)
Ken Hinckley (*Microsoft Research*)

Papers: Tools for Programmers/Developers

Paper65: ScalAR: Authoring Semantically Adaptive Augmented Reality Experiences in Virtual Reality

Xun Qian (*Purdue University*)
Fengming He (*Purdue University*)
Xiyun Hu (*Purdue University*)
Tianyi Wang (*Purdue University*)
Ananya Ipsita (*Purdue University*)
Karthik Ramani (*Purdue University*)

Paper66: An Exploratory Study of Sharing Strategic Programming Knowledge

Maryam Arab (*George Mason University*)
Thomas LaToza (*George Mason University*)
Jenny Liang (*University of Washington*)
Amy Ko (*University of Washington*)

Paper67: Learning to Denoise Raw Mobile UI Layouts for Improving Datasets at Scale

Gang Li (*Google Research*)
Gilles Baechler (*Google Research*)
Manuel Tragut (*Google*)
Yang Li (*Google Research*)

Paper68: Crystalline: Lowering the Cost for Developers to Collect and Organize Information for Decision Making

Michael Xieyang Liu (*Carnegie Mellon University*)
Aniket Kittur (*Carnegie Mellon University*)
Brad Myers (*Carnegie Mellon University*)

Paper69: Understanding How Programmers Can Use Annotations on Documentation

Amber Horvath (*Carnegie Mellon University, Carnegie Mellon University*)
Michael Xieyang Liu (*Human-Computer Interaction Institute, Human-Computer Interaction Institute*)
River Hendriksen (*University of Pittsburgh, University of Pittsburgh*)
Connor Shannon (*Carnegie Mellon University, Carnegie Mellon University*)
Emma Paterson (*Tufts University*)
Kazi Jawad (*Carnegie Mellon University, Carnegie Mellon University*)
Andrew Macvean (*Google, Google*)
Brad Myers (*Carnegie Mellon University, Carnegie Mellon University*)

Papers: Users' Preferences and Needs

Paper70: How to Save Lives With Microblogs? Lessons From the Usage of Weibo for Requests for Medical Assistance During COVID-19

Wenjie Yang (*The Hong Kong University of Science and Technology, The Hong Kong University of Science and Technology*)
Zhiyang WU (*Hong Kong University of Science and Technology, Hong Kong University of Science and Technology*)

Nga Yiu Mok (*Hong Kong University of Science and Technology, Hong Kong University of Science and Technology*)
Xiaojuan Ma (*Hong Kong University of Science and Technology, Hong Kong University of Science and Technology*)

Paper71: How Much Do Platform Workers Value Reviews? An Experimental Method

David Holtz (*University of California, Berkeley, Massachusetts Institute of Technology*)
Liane Scult (*Microsoft Corporation*)
Siddharth Suri (*Microsoft Research*)

Paper72: Studying How Digital Luthiers Choose Their Tools

Nathan Renney (*University of West of England*)
Benedict Gaster (*University of West of England*)
Tom Mitchell (*UWE Bristol*)
Harri Renney (*University of the West of England*)

Paper73: A Systematic Review and Thematic Analysis of Community-Collaborative Approaches to Computing Research

Ned Cooper (*Australian National University*)
Tiffanie Horne (*Google LLC (via Pro Unlimited)*)
Gillian Hayes (*University of California, Irvine*)
Courtney Heldreth (*Google*)
Michal Lahav (*Google*)
Jess Holbrook (*Google*)
Lauren Wilcox (*Google*)

Paper74: A Personalized Visual Aid for Selections of Appearance Building Products with Long-term Effects

Chuhan Shi (*Hong Kong University of Science and Technology*)
Zhihan Jiang (*The University of Hong Kong*)
Xiaojuan Ma (*Hong Kong University of Science and Technology*)
Qiong Luo (*the Hong Kong University of Science and Technology*)

Papers: COVID Technologies

Paper75: Public Views on Digital COVID-19 Certificates: a Mixed Methods User Study

Leysan Nurgalieva (*Aalto University*)
Seamus Ryan (*Trinity College Dublin*)
Andreas Balaskas (*Trinity College Dublin*)
Janne Lindqvist (*Aalto University*)
Gavin Doherty (*Trinity College Dublin*)

Paper76: Supporting the Contact Tracing Process with WiFi Location Data: Opportunities and Challenges

Kaely Hall (*Georgia Institute of Technology*)
Dong Whi Yoo (*Georgia Institute of Technology*)
Wenrui Zhang (*Georgia Institute of Technology*)
Mehrab Bin Morshed (*Georgia Institute of Technology*)
Vedant Das Swain (*Georgia Institute of Technology*)
Gregory Abowd (*Northeastern University*)
Munmun De Choudhury (*Georgia Institute of Technology*)
Alex Endert (*Georgia Institute of Technology*)
John Stasko (*Georgia Institute of Technology*)
Jennifer Kim (*Georgia Institute of Technology*)

Paper77: Does Mode of Digital Contact Tracing Affect User Willingness to Share Information? A Quantitative Study

Camellia Zakaria (*University of Massachusetts Amherst*)
Pin Sym Foong (*National University of Singapore*)
Chang Siang Lim (*Singapore ETH Center*)
Pavithren V. S. Pakianathan (*National University of Singapore*)
Gerald Huat Choon Koh (*National University of Singapore*)
Simon Perrault (*Singapore University of Technology and Design*)

Paper78: Shifting Trust: Examining How Trust and Distrust Emerge, Transform, and Collapse in COVID-19 Information Seeking

Yixuan Zhang (*Georgia Institute of Technology*)
Nurul Suhaimi (*Northeastern University*)
Nutchanon Yongsatianchot (*Northeastern University*)
Joseph Gaggiano (*Georgia Institute of Technology*)
Miso Kim (*Northeastern University*)
Shivani Patel (*Emory University*)
Yifan Sun (*William & Mary*)
Stacy Marsella (*Northeastern University*)
Jacqueline Griffin (*Northeastern University*)
Andrea Parker (*Georgia Tech, Emory University*)

Paper79: Unpacking Intention and Behavior: Explaining Contact Tracing App Adoption and Hesitancy in the United States

Jack Jamieson (*NTT*)
Daniel Epstein (*University of California, Irvine*)
Yunan Chen (*University of California Irvine*)
Naomi Yamashita (*NTT*)

Papers: Vis Right Here, Right Now

Paper80: Annotating Line Charts for Addressing Deception

Arlen Fan (*Arizona State University*)
Yuxin Ma (*Southern University of Science and Technology*)
Michelle Mancenido (*Arizona State University*)
Ross Maciejewski (*Arizona State University*)

Paper81: Making Data Tangible: A Cross-disciplinary Design Space for Data Physicalization

S. Sandra Bae (*University of Colorado Boulder*)
Clement Zheng (*National University of Singapore*)
Mary West (*University of Colorado Boulder*)
Ellen Yi-Luen Do (*University of Colorado Boulder*)
Samuel Huron (*Télécom Paristech, Université Paris-Saclay*)
Danielle Szafir (*University of Colorado, University of North Carolina-Chapel Hill*)

Paper82: Put a Label On It! Approaches for Constructing and Contextualizing Bar Chart Physicalizations

Kim Sauv e (*Lancaster University*)
Argenis Ramirez Gomez (*University of Portsmouth*)
Steven Houben (*Eindhoven University of Technology*)

Paper83: Visualization Accessibility in the Wild: Challenges Faced by Visualization Designers

Shakila Cherise Joyner (*Boston College*)
Amalia Riegelhuth (*Boston College*)
Kathleen Garrity (*Boston College*)
Yea-Seul Kim (*University of Wisconsin-Madison*)
Nam Wook Kim (*Boston College*)

Paper84: The Pattern is in the Details: An Evaluation of Interaction Techniques for Locating, Searching, and Contextualizing Details in Multivariate Matrix Visualizations

Yalong Yang (*Virginia Tech*)
Wenyu Xia (*Carnegie Mellon University*)
Fritz Lekschas (*Harvard University*)
Carolina Nobre (*Harvard University*)
Robert Kr uger (*John A. Paulson School of Engineering and Applied Sciences at Harvard University*)
Hanspeter Pfister (*Harvard University*)

Papers: Games affect Players and Players affect Games

Paper85: RoleSeer: Understanding Informal Social Role Changes in MMORPGs via Visual Analytics

Laixin Xie (*ShanghaiTech University*)
Ziming Wu (*Hong Kong University of Science and Technology*)
Peng Xu (*Netease*)
Wei Li (*Eindhoven University of Technology*)
Xiaojuan Ma (*Hong Kong University of Science and Technology*)
Quan Li (*ShanghaiTech University*)

Paper86: Including the Experiences of Physically Disabled Players in Mainstream Guidelines for Movement-Based Games

Liam Mason (*University of Lincoln, University of Lincoln*)
Kathrin Gerling (*KU Leuven, KU Leuven*)
Patrick Dickinson (*University of Lincoln, University of Lincoln*)
Jussi Holopainen (*University of Lincoln, University of Lincoln*)
Lisa Jacobs (*University of Lincoln, University of Lincoln*)
Kieran Hicks (*University of Lincoln, University of Lincoln*)

Paper87: Identifying Game Mechanics for Integrating Fabrication Activities within Existing Digital Games

Dishita Turakhia (*MIT CSAIL*)
Stefanie Mueller (*MIT CSAIL*)
Kayla DesPortes (*New York University*)

Paper88: I Don't Usually Listen, I Read: How Different Learner Groups Process Game Feedback

Andrea Gauthier (*Institute of Education*)
Laura Benton (*University College London*)
Leona Bunting (*University of Gothenburg*)
Elisabeth Herbert (*UCL*)
Emma Sumner (*UCL*)
Manolis Mavrikis (*UCL Knowledge Lab*)
Andrea Revesz (*University College London*)
Asimina Vasalou (*University College London*)

Papers: Video for Learning

Paper89: Does Dynamically Drawn Text Improve Learning? Investigating the Effect of Text Presentation Styles in Video Learning

Ashwin Ram (*National University of Singapore*)
Shengdong Zhao (*National University of Singapore*)

Paper90: Visualizing Instructions for Physical Training: Exploring Visual Cues to Support Movement Learning from Instructional Videos

Alessandra Semeraro (*Uppsala University*)
Laia Turmo Vidal (*Uppsala University*)

Paper91: immersivePOV: Filming How-To Videos with a Head-Mounted 360° Action Camera

Kevin Huang (*University of Toronto, Simon Fraser University*)
Jiannan Li (*University of Toronto*)
Mauricio Sousa (*University of Toronto*)
Tovi Grossman (*University of Toronto*)

Paper92: Mobile-Friendly Content Design for MOOCs: Challenges, Requirements, and Design Opportunities

Jeongyeon Kim (*KAIST*)
Yubin Choi (*KAIST*)
Meng Xia (*KAIST*)
Juho Kim (*KAIST*)

Papers: Interacting with Data

Paper93: OneLabeler: A Flexible System for Building Data Labeling Tools

Yu Zhang (*University of Oxford*)
Yun Wang (*Microsoft Research Asia*)
Haidong Zhang (*Microsoft Research Asia*)
Bin Zhu (*Microsoft Research Asia*)
Siming Chen (*Fudan University*)
Dongmei Zhang (*Microsoft Research Asia*)

Paper94: graphiti: Sketch-based Graph Analytics for Images and Videos

Nazmus Saquib (*Tero Labs, MIT Media Lab*)
Faria Huq (*Tero Labs*)
Syed Arefinul Haque (*Northeastern University*)

Paper95: CrossData: Leveraging Text-Data Connections for Authoring Data Documents

Zhutian Chen (*University of California San Diego*)
Haijun Xia (*University of California, San Diego*)

Paper96: Promptiverse: Scalable Generation of Scaffolding Prompts Through Human-AI Hybrid Knowledge Graph Annotation

Yoonjoo Lee (*KAIST*)
John Chung (*University of Michigan*)
Tae Soo Kim (*KAIST*)
Jean Song (*DGIST*)
Juho Kim (*KAIST*)

Paper97: Diff in the Loop: Supporting Data Comparison in Exploratory Data Analysis

April Wang (*University of Michigan*)
Will Epperson (*Carnegie Mellon University*)
Robert DeLine (*Microsoft Corp*)
Steven Drucker (*Microsoft Research*)

Papers: Making and Unmaking

Paper98: Weaving Stories: Toward Repertoires for Designing Things

Doenja Oogjes (*Simon Fraser University*)
Ron Wakkary (*Simon Fraser University, Eindhoven University of Technology*)

Paper99: Flavorium: An Exploration of Flavobacteria's Living Aesthetics for Living Color Interfaces

Eduard Groutars (*Avans University of Applied Sciences, Delft University of Technology*)
Carmen Risseeuw (*Delft University of Technology, Avans University of Applied Sciences*)
Colin Ingham (*Hoekmine BV*)
Raditijo Hamidjaja (*Hoekmine B.V.*)
Willemijn Elkhuisen (*Delft University of Technology*)
Sylvia Pont (*Delft University of Technology*)
Elvin Karana (*Delft University of Technology, Avans University of Applied Sciences*)

Paper100: Towards Decomposable Interactive Systems: Design of a Backyard-Degradable Wireless Heating Interface

Katherine Song (*Accenture Labs, UC Berkeley*)
Aditi Maheshwari (*Accenture Labs*)
Eric Gallo (*Accenture*)
Andreea Danielescu (*Accenture Labs*)
Eric Paulos (*UC Berkeley*)

Paper101: The Eco-Technical Interface: Attuning to the Instrumental

Maya Livio (*University of Colorado*)
Laura Devendorf (*University of Colorado Boulder*)

Papers: Privacy, Policy and Politics

Paper102: Many Islands, Many Problems: An Empirical Examination of Online Safety Behaviors in the Caribbean

Darcia Wilkinson (*Clemson University*)
Bart Knijnenburg (*Clemson University*)

Paper103: Are deepfakes concerning? Exploring societal implications of deepfake conversations in Reddit

Dilrukshi Gamage (*Tokyo Institute of Technology*)
Piyush Ghasiya (*Tokyo Institute of Technology*)
Vamshi Bonagiri (*International Institute of Information Technology*)
Mark Whiting (*University of Pennsylvania*)
Kazutoshi Sasahara (*Tokyo Institute of Technology*)

Paper104: Caught in the Network: The Impact of WhatsApp's 2021 Privacy Policy Update on Users' Messaging App Ecosystems

Carla Griggio (*Aarhus University*)
Midas Nouwens (*Aarhus University*)
Clemens Klokmoose (*Aarhus University*)

Paper105: "Ask this from the person who has private stuff": Privacy Perceptions, Behaviours and Beliefs Beyond W.E.I.R.D

Sheza Naveed (*Lahore University of Management Sciences*)
Hamza Naveed (*Lahore University of Management Sciences*)
Mobin Javed (*LUMS*)
Maryam Mustafa (*Lahore University of Management Sciences*)

Paper106: Human-GDPR Interaction: Practical Experiences of Accessing Personal Data

Alex Bowyer (*Newcastle University*)
Jack Holt (*Newcastle University*)
Josephine Go Jefferies (*Newcastle University*)
Rob Wilson (*Northumbria University*)
David Kirk (*Newcastle University*)
Jan Smeddinck (*Newcastle University*)

Papers: Let's get Physical

Paper107: XR-OOM: MiXed Reality driving simulation with real cars for research and design

David Goedicke (*Cornell Tech*)
Alexandra Bremers (*Cornell Tech*)
Sam Lee (*Cornell Tech*)
Fanjun Bu (*Cornell Tech*)
Hiroshi Yasuda (*Toyota Research Institute*)
Wendy Ju (*Cornell Tech*)

Paper108: ControllerPose: Inside-Out Body Capture with VR Controller Cameras

Karan Ahuja (*Carnegie Mellon University*)
Vivian Shen (*Carnegie Mellon University*)
Cathy Mengying Fang (*Carnegie Mellon University*)
Nathan Riopelle (*Human-Computer Interaction Institute, Carnegie Mellon University*)
Andy Kong (*Carnegie Mellon University*)
Chris Harrison (*Carnegie Mellon University*)

Paper109: Enabling Tangible Interaction on Non-touch Displays with Optical Mouse Sensor and Visible Light Communication

Yihui Yan (*ShanghaiTech University*)
Zezhe Huang (*ShanghaiTech University*)
Feiyang Xudu (*ShanghaiTech University*)
Zhice Yang (*ShanghaiTech University*)

Paper110: Embr: A Creative Framework for Hand Embroidered Liquid Crystal Textile Displays

Shreyosi Endow (*University of Texas at Arlington*)

Mohammad Abu Nasir Rakib (*University of Texas at Arlington*)
Anvay Srivastava (*University of Texas at Arlington*)
Sara Rastegarpouyani (*Savannah College of Art and Design*)
Cesar Torres (*UT Arlington*)

Paper111: ASTEROIDS: Exploring Swarms of Mini-Telepresence Robots for Physical Skill Demonstration

Jiannan Li (*University of Toronto*)
Mauricio Sousa (*University of Toronto*)
Chu Li (*University of Toronto*)
Jessie Liu (*University of Toronto*)
Yan Chen (*University of Toronto*)
Ravin Balakrishnan (*University of Toronto*)
Tovi Grossman (*University of Toronto*)

Papers: Agents in the Loop

Paper112: Investigating Positive and Negative Qualities of Human-in-the-Loop Optimization for Designing Interaction Techniques

Liwei Chan (*National Chiao Tung University*)
Yi-Chi Liao (*Aalto University*)
George Mo (*University of Cambridge*)
John Dudley (*University of Cambridge*)
Chun-Lien Cheng (*National Chiao Tung University*)
Per Ola Kristensson (*University of Cambridge*)
Antti Oulasvirta (*Aalto University*)

Paper113: For What It's Worth: Humans Overwrite Their Economic Self-Interest to Avoid Bargaining With AI Systems

Alexander Erlei (*University of Goettingen*)
Richeek Das (*Indian Institute of Technology Bombay*)
Lukas Meub (*University of Goettingen*)
Avishek Anand (*Leibniz Universität Hannover*)
Ujwal Gadiraju (*Delft University of Technology*)

Paper114: You Complete Me: Human-AI Teams and Complementary Expertise

Qiaoning Zhang (*University of Michigan-Ann Arbor*)
Matthew Lee (*Toyota Research Institute*)
Scott Carter (*Toyota Research Institute*)

Paper115: Jury Learning: Integrating Dissenting Voices into Machine Learning Models

Mitchell Gordon (*Stanford University*)
Michelle Lam (*Stanford University*)
Joon Sung Park (*Stanford University*)
Kayur Patel (*Apple Inc*)
Jeff Hancock (*Stanford University*)
Tatsunori Hashimoto (*Stanford University*)
Michael Bernstein (*Stanford University*)

Paper116: What is Your Current Mindset? Categories for a satisficing exploration of mobile point-of-interest recommendations

Sruthi Viswanathan (*NAVER LABS Europe*)
Behrooz Omidvar-Tehrani (*NAVER LABS Europe*)
Jean-Michel Renders (*NAVER LABS Europe*)

Papers: Helping People

Paper117: Designing and Assessing a Virtual Reality Simulation to Build Resilience to Street Harassment

Crescent Jicol (*University of Bath*)
Julia Feltham (*University of Bath*)

Jinha Yoon (*University of Bath*)
Michael Proulx (*University of Bath*)
Eamonn O'Neill (*University of Bath*)
Christof Lutteroth (*University of Bath*)

Paper118: (Re)discovering the Physical Body Online: Strategies and Challenges to Approach Non-Cisgender Identity in Social Virtual Reality

Guo Freeman (*Clemson University*)
Divine Maloney (*Clemson University*)
Dane Acena (*Clemson University*)
Catherine Barwulor (*Clemson University*)

Paper119: This App is not for Me: Using Mobile and Wearable Technologies to Improve Adolescents' Smartphone Addiction through the Sharing of Personal Data with Parents

Pin-Chieh Chen (*National Tsing Hua University*)
Min-Wei Hung (*National Tsing Hua University*)
Hsueh-Sung Lu (*National Tsing Hua University*)
Chien Wen (Tina) Yuan (*National Taiwan Normal University*)
Nanyi Bi (*National Taiwan University*)
Wan-Chen Lee (*Taipei City Hospital Songde Branch*)
Ming-Chyi Huang (*Taipei City Hospital Songde Branch*)
Chuang-Wen You (*National Tsing Hua University*)

Paper120: Unpacking Invisible Work Practices, Constraints, and Latent Power Relationships in Child Welfare through Casenote Analysis

Devansh Saxena (*Marquette University*)
Erina Seh-Young Moon (*University of Toronto*)
Dahlia Shehata (*University of Waterloo*)
Shion Guha (*University of Toronto*)

Papers: Socio-technical aspects of cybercrime

Paper121: "It's common and a part of being a content creator": Understanding How Creators Experience and Cope With Hate and Harassment Online

Kurt Thomas (*Google*)
Patrick Kelley (*Google*)
Sunny Consolvo (*Google*)
Patrawat Samermit (*Google*)
Elie Bursztein (*Google*)

Paper122: A Large-Scale Measurement of Cybercrime Against Individuals

Casey Breen (*University of California, Berkeley*)
Cormac Herley (*Microsoft Research*)
Elissa Redmiles (*Max Planck Institute for Software Systems*)

Paper123: Care Infrastructures for Digital Security in Intimate Partner Violence

Emily Tseng (*Cornell Tech*)
Mehrnaz Sabet (*Cornell University*)
Rosanna Bellini (*Cornell Tech*)
Harkiran Sodhi (*Cornell Tech*)
Thomas Ristenpart (*Cornell Tech*)
Nicola Dell (*Cornell Tech*)

Paper124: How to Get Away with Cyberattacks: An Argumentative Approach to Cyberattacks' Legitimization by Common Users

Anna Spagnolli (*University of Padova*)
Mariavittoria Masotina (*University of Padova*)
Annalorena Scarcia (*University of Padova*)
Beatrice Zuffi (*University of Padova*)

Luciano Gamberini (*University of Padova*)

Papers: Crowdwork & Collaboration

Paper125: Templates and Trust-o-meters: Towards a widely deployable indicator of trust in Wikipedia

Andrew Kuznetsov (*Carnegie Mellon University*)

Margeigh Novotny (*Wikimedia Foundation*)

Jessica Klein (*Wikimedia Foundation*)

Diego Saez-Trumper (*Wikimedia Foundation*)

Aniket Kittur (*Carnegie Mellon University*)

Paper126: ARMY's Magic Shop: Understanding the Collaborative Construction of Playful Places in Online Communities

Kathryn Ringland (*University of California, Santa Cruz*)

Arpita Bhattacharya (*University of California, Irvine*)

Kevin Weatherwax (*University of California, Santa Cruz*)

Tessa Eagle (*UC Santa Cruz*)

Christine Wolf (*Independent Researcher*)

Paper127: Re-imagining the Power of Priming and Framing Effects in the Context of Political Crowdfunding Campaigns

Sanorita Dey (*University of Maryland Baltimore County*)

Brittany Duff (*University of Illinois at Urbana-Champaign*)

Karrie Karahalios (*University of Illinois at Urbana-Champaign*)

Paper128: The social embeddedness of peer production: A comparative qualitative analysis of three Indian language Wikipedia editions

Sejal Khatri (*University of Washington*)

Aaron Shaw (*Northwestern University*)

Sayamindu Dasgupta (*University of North Carolina at Chapel Hill*)

Benjamin Mako Hill (*University of Washington, Harvard University*)

Paper129: Compete, Collaborate, Investigate: Exploring the Social Structures of Open Source Intelligence Investigations

Yasmine Belghith (*Georgia Institute of Technology*)

Sukrit Venkatagiri (*Virginia Tech*)

Kurt Luther (*Virginia Tech*)

Papers: Design and Mixed Reality

Paper130: ProGesAR: Mobile AR Prototyping for Proxemic and Gestural Interactions with Real-world IoT Enhanced Spaces

Hui Ye (*City University of Hong Kong*)

Hongbo Fu (*City University of Hong Kong*)

Paper131: ExposAR: Bringing Augmented Reality to the Computational Thinking Agenda through a Collaborative Authoring Tool

Mille Skovhus Lunding (*Aarhus University*)

Jens Emil Grønbaek (*Aarhus University*)

Karl-Emil Bilstrup (*Aarhus University*)

Marie-Louise Sørensen (*Aarhus University*)

Marianne Graves Petersen (*Aarhus University*)

Paper132: The Normal Natural Troubles of Virtual Reality in Mixed-Reality Performances

Asreen Rostami (*RISE Research Institutes of Sweden, Stockholm University*)

Donald McMillan (*Stockholm University*)

Paper133: Virtual Transcendent Dream: Empowering People through Embodied Flying in VR

Pinyao Liu (*Simon Fraser University*)

Ekaterina Stepanova (*Simon Fraser University*)

Alexandra Kitson (*Simon Fraser University*)
Thecla Schiphorst (*Simon Fraser University*)
Bernhard Riecke (*Simon Fraser University*)

Papers: Visual Perception & Exploration

Paper134: Accessibility for Color Vision Deficiencies: Challenges and Findings of a Large Scale Study on Paper Figures

Katrin Angerbauer (*University of Stuttgart*)
Nils Rodrigues (*University of Stuttgart*)
Rene Cutura (*University of Stuttgart*)
Seyda Öney (*University of Stuttgart*)
Nelusa Pathmanathan (*University of Stuttgart*)
Cristina Morariu (*VISUS*)
Daniel Weiskopf (*University of Stuttgart*)
Michael Sedlmair (*University of Stuttgart*)

Paper135: GAN'SDA Wrap: Geographic And Network Structured DATA on surfaces that Wrap around

Kun-Ting Chen (*Monash University, Monash University*)
Tim Dwyer (*Monash University, Monash University*)
Yalong Yang (*Virginia Tech, Virginia Tech*)
Benjamin Bach (*University of Edinburgh, University of Edinburgh*)
Kim Marriott (*Monash University, Monash University*)

Paper136: Understanding Visual Investigation Patterns Through Digital "Field" Observations

Irene Rae (*Google*)
Feng Zhou (*Google*)
Martin Bilsing (*Google*)
Philipp Bunge (*Google*)

Paper137: Investigating Perceptual Biases in Icon Arrays

Cindy Xiong (*University of Massachusetts Amherst*)
Ali Sarvghad (*University of Massachusetts Amherst*)
Daniel Goldstein (*Microsoft Research*)
Jake Hofman (*Microsoft Research*)
Çağatay Demiralp (*Sigma Computing*)

Paper138: Juvenile Graphical Perception: A Comparison between Children and Adults

Liudas Panavas (*Northeastern University*)
Amy Worth (*Ivy After School Program*)
Tarik Crnovrsanin (*Northeastern University*)
Tejas Sathyamurthi (*Northeastern University*)
Sara Cordes (*Boston College*)
Michelle Borkin (*Northeastern University*)
Cody Dunne (*Northeastern University*)

Papers: Connection

Paper139: Strategies for Fostering a Genuine Feeling of Connection in Technologically Mediated Systems

Ekaterina Stepanova (*Simon Fraser University*)
John Desnoyers-Stewart (*Simon Fraser University*)
Kristina Höök (*KTH Royal Institute of Technology*)
Bernhard Riecke (*Simon Fraser University*)

Paper140: Exploring uncertainty in digital scheduling, and the wider implications of unrepresented temporalities in HCI

Ryan Bowler (*The University of Edinburgh, The University of Edinburgh*)
Benjamin Bach (*University of Edinburgh, University of Edinburgh*)

Larissa Pschetz (*University of Edinburgh, University of Edinburgh*)

Paper141: Distracting Moments in Videoconferencing: A Look Back at the Pandemic Period

Minha Lee (*KAIST*)
Wonyoung Park (*KAIST*)
Sunok Lee (*KAIST*)
Sangsu Lee (*KAIST*)

Paper142: Reflection in Theory and Reflection in Practice: An Exploration of the Gaps in Reflection Support among Personal Informatics Apps

Janghee Cho (*University of Colorado, Boulder*)
Tian Xu (*University of Colorado Boulder*)
Abigail Zimmermann-Niefield (*University of Colorado Boulder*)
Stephen Volda (*University of Colorado*)

Paper143: Zoom Obscura: Counterfunctional Design for Video-Conferencing

Chris Elsdon (*University of Edinburgh*)
David Chatting (*Goldsmiths, University of London*)
Michael Duggan (*Kings College London*)
Andrew Dwyer (*Durham University*)
Pip Thornton (*University of Edinburgh*)

Papers: Deviance Online

Paper144: Perceiving Affordances Differently: The Unintended Consequences When Young Autistic Adults Engage with Social Media

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Andrew Capener (*Brigham Young University*)
Spring Cullen (*Brigham Young University*)
Tao Wang (*University of California Irvine*)
Monica Garfield (*Bentley University*)
Pamela Wisniewski (*University of Central Florida*)

Paper145: The Polyvocality of Online COVID-19 Vaccine Narratives that Invoke Medical Racism

Lindsay Diamond (*University of Colorado Boulder*)
Hande Batan (*University of Colorado Boulder*)
Jennings Anderson (*University of Colorado Boulder*)
Leysia Palen (*University of Colorado Boulder*)

Paper146: Sensemaking, Support, Safety, Retribution, Transformation: Understanding Adolescents' Needs for Addressing Online Harm

Sijia Xiao (*University of California, Berkeley*)
Coye Cheshire (*UC Berkeley*)
Niloufar Salehi (*UC, Berkeley*)

Paper147: Sad or just jealous? Using Experience Sampling to Understand and Detect Negative Affective Experiences on Instagram

Mintra Ruensuk (*UNIST*)
Taewan Kim (*KAIST*)
Hwajung Hong (*KAIST*)
Ian Oakley (*UNIST*)

Paper148: Understanding the Digital Lives of Youth: Analyzing Media Shared within Safe Versus Unsafe Private Conversations on Instagram

Shiza Ali (*Boston University*)
Afsaneh Razi (*University of Central Florida*)
Seunghyun Kim (*Georgia Institute of Technology*)
Ashwaq Alsoubai (*University of Central Florida*)

Joshua Gracie (*University of Central Florida*)
Munmun De Choudhury (*Georgia Institute of Technology*)
Pamela Wisniewski (*University of Central Florida*)
Gianluca Stringhini (*Boston University*)

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Paper149: The Last Decade of HCI Research on Children and Conversational Agents

Radhika Garg (*Syracuse University*)
Hua Cui (*Syracuse University*)
Spencer Seligson (*Syracuse University*)
Bo Zhang (*Syracuse University*)
Martin Porcheron (*Swansea University*)
Leigh Clark (*Swansea University*)
Benjamin Cowan (*University College Dublin*)
Erin Beneteau (*University of Washington*)

Paper150: Participatory Design Goes to School: Co-Teaching as a Form of Co-Design for Educational Technology

Rebecca Nicholson (*Newcastle University*)
Tom Bartindale (*Monash University*)
Ahmed Kharrufa (*Newcastle University*)
David Kirk (*Newcastle University*)
Professor Caroline Walker-Gleaves (*Newcastle University*)

Paper151: The Unboxing Experience: Exploration and Design of Initial Interactions Between Children and Social Robots

Christine Lee (*University of Wisconsin-Madison*)
Bengisu Cagiltay (*University of Wisconsin - Madison*)
Bilge Mutlu (*University of Wisconsin-Madison*)

Paper152: "It Would Be Cool to Get Stampeded by Dinosaurs": Analyzing Children's Conceptual Model of AR Headsets Through Co-Design

Julia Woodward (*University of Florida*)
Feben Alemu (*University of Washington*)
Natalia López Adames (*University of Puerto Rico*)
Lisa Anthony (*University of Florida*)
Jason Yip (*University of Washington*)
Jaime Ruiz (*University of Florida*)

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Paper153: "I Didn't Catch That, But I'll Try My Best": Anticipatory Error Handling in a Voice Controlled Game

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Johannes Pfau (*University of Bremen*)
Tobias Schnackenberg (*University of Bremen*)
Rainer Malaka (*University of Bremen*)

Paper154: The Impact of Latency on Navigation in a First-Person Perspective Game

Shengmei Liu (*Worcester Polytechnic Institute*)
Mark Claypool (*WPI*)

Paper155: Press A to Jump: Design Strategies for Video Game Learnability

Lev Poretski (*University of Toronto*)
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Paper156: Trading Accuracy for Enjoyment? Data Quality and Player Experience in Data Collection Games

David Gundry (*University of York*)

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Paper157: The Reward for Luck: Understanding the Effect of Random Reward Mechanisms in Video Games on Player Experience

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Robert Xiao (*University of British Columbia*)

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Paper158: “Because AI is 100% right and safe”: User Attitudes and Sources of AI Authority in India

Shivani Kapania (*Google Research*)

Oliver Siy (*Google Research*)

Gabe Clapper (*Google Research*)

Azhagu Meena SP (*Google Research*)

Nithya Sambasivan (*Google Research*)

Paper159: Still Creepy After All These Years: The Normalization of Affective Discomfort in App Use

John Seberger (*Michigan State University*)

Irina Shklovski (*University of Copenhagen*)

Emily Swiatek (*Indiana University Bloomington*)

Sameer Patil (*University of Utah*)

Paper160: Capable but Amoral? Comparing AI and Human Expert Collaboration in Ethical Decision Making

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Markus Christen (*University of Zurich*)

Serhiy Kandul (*University of Zurich*)

Markus Kneer (*University of Zurich*)

Abraham Bernstein (*University of Zurich*)

Paper161: AI-Moderated Decision-Making: Capturing and Balancing Anchoring Bias in Sequential Decision Tasks

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Matin Yarmand (*University of California, San Diego*)

Julian McAuley (*University of California, San Diego*)

Paper162: How Child Welfare Workers Reduce Racial Disparities in Algorithmic Decisions

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Logan Stapleton (*University of Minnesota*)

Anna Kawakami (*Carnegie Mellon University*)

Venkatesh Sivaraman (*Carnegie Mellon University*)

Yanghui Cheng (*Carnegie Mellon University*)

Diana Qing (*University of California, Berkeley*)

Adam Perer (*Carnegie Mellon University*)

Kenneth Holstein (*Carnegie Mellon University*)

Zhiwei Steven Wu (*Carnegie Mellon University*)

Haiyi Zhu (*Carnegie Mellon University*)

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Jessy Ceha (*University of Waterloo*)

Edith Law (*University of Waterloo*)

Paper164: To Type or To Speak? The Effect of Input Modality on Text Understanding During Note-taking

Anam Ahmad Khan (*The University of Melbourne*)

Sadia Nawaz (*The University of Melbourne*)

Joshua Newn (*The University of Melbourne*)

Ryan Kelly (*University of Melbourne*)
Jason Lodge (*The University of Queensland*)
James Bailey (*The University of Melbourne*)
Eduardo Velloso (*University of Melbourne*)

Paper165: Audio Matters Too: How Audial Avatar Customization Enhances Visual Avatar Customization

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Rabindra Ratan (*Michigan State University*)
Christos Mousas (*Purdue University*)
Amogh Joshi (*Purdue University*)
Edward Melcer (*University of California, Santa Cruz*)

Paper166: “Elinor’s Talking to Me!?: Integrating Conversational AI into Children’s Science Narrative Programming

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Valery Vigil (*University of California Irvine*)
Andres Bustamante (*University of California Irvine*)
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Paper167: Supporting the Design of Smart Speakers to Foster a Sense of Ownership in Asian Indian Families

Radhika Garg (*Syracuse University*)

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Paper168: FAR: End-to-End Vibrotactile Distributed System Designed to Facilitate Affect Regulation in Children Diagnosed with Autism Spectrum Disorder Through Slow Breathing

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Mehul Arora (*Stanford University*)
Aman Malhotra (*Stanford University*)
Robert Flory (*Intel*)
Stephanie Hu (*Stanford University*)
Ashley Lowber (*Stanford University*)
Ishan Goyal (*Stanford University*)
Jacqueline Nguyen (*Stanford University*)
John Hegarty (*Stanford University*)
Marlo Kohn (*Stanford University*)
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Liang He (*University of Washington*)
Fangli Song (*School of design*)
Yifan Li (*Georgia Institute of Technology*)
Tingyu Cheng (*Interactive Computing*)
Clement Zheng (*National University of Singapore*)
Wei Wang (*Hunan University*)
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Gina Olson (*Carnegie Mellon University*)
Carmel Majidi (*Carnegie Mellon University*)
Mohammad Islam (*Materials Science and Engineering*)
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Paper171: Shape-Haptics: Planar & Passive Force Feedback Mechanisms for Physical Interfaces

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Jiachen Li (*Georgia Institute of Technology, Georgia Institute of Technology*)
Charles Ramey (*Georgia Institute of Technology, Georgia Institute of Technology*)
Hongnan Lin (*Georgia Institute of Technology, Georgia Institute of Technology*)
Gregory Abowd (*Northeastern University, Northeastern University*)
Carolina Brum Medeiros (*Flipr Sensing, Flipr Sensing*)
HyunJoo Oh (*Georgia Institute of Technology, Georgia Institute of Technology*)
Marcello Giordano (*Facebook Reality Labs, Facebook Reality Labs*)

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Zichao Shen (*University of Bristol*)
Mike Fraser (*University of Bath*)
Anne Roudaut (*University of Bristol*)

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Daniela Mitterberger (*ETH Zurich*)
Selen Ercan Jenny (*ETH Zurich*)
Lauren Vasey (*ETH Zurich*)
Ena Lloret-Fritschi (*ETH Zurich*)
Petrus Aejmelaeus-Lindström (*ETH Zurich*)
Fabio Gramazio (*ETH Zurich*)
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Kui Wu (*MIT*)
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Pedro Sanches (*ITI/Larsys, Umeå University*)

Kristina Höök (*KTH Royal Institute of Technology*)

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Lian Loke (*The University of Sydney*)

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Paper182: Debiased-CAM to mitigate image perturbations with faithful visual explanations of machine learning

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Chao-Jung Lai (*National Taiwan University*)

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Florian Müller (*TU Darmstadt*)
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Lisa Gasche (*Technical University of Darmstadt*)
Julia Abels (*Technical University of Darmstadt*)
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Paper190: Much Realistic, Such Wow! A Systematic Literature Review of Realism in Digital Games

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Jonas Schild (*TH Köln*)

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Akhter Al Amin (*Rochester Institute of Technology*)
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Chun Yu (*Tsinghua University, Tsinghua University*)
JiaHui Li (*Tsinghua University, Tsinghua University*)
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Xiaojun Bi (*Stony Brook University, Stony Brook University*)
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Hwaran Lee (*NAVER Corp.*)
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Ángel Alexander Cabrera (*Carnegie Mellon University, Apple*)
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Quentin Roy (*University of Waterloo*)
Da-Yuan Huang (*Huawei Canada*)
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Graeme Zinck (*University of Waterloo*)
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Eleanor Derix (*UTS*)
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Julia Prior (*UTS*)

Paper217: Exploring Technology-Mediated Parental Socialisation of Emotion: Leveraging an Embodied, In-situ Intervention for Child Emotion Regulation

Nikki Theofanopoulou (*King’s College London*)
Petr Slovak (*King’s College London*)

Paper218: StoryBuddy: A Human-AI Collaborative Agent for Parent-Child Interactive Storytelling with Flexible Parent Involvement

Zheng Zhang (*University of Notre Dame*)
Ying Xu (*University of California, Irvine*)
Yanhao Wang (*Georgia Institute of Technology*)
Bingsheng Yao (*Rensselaer Polytechnic Institute*)
Daniel Ritchie (*University of California, Irvine*)
Tongshuang Wu (*University of Washington*)
Mo Yu (*IBM Research*)
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Paper219: Captivate! Contextual Language Guidance for Parent–Child Interaction

Taeahn Kwon (*Columbia University*)
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Youngki Lee (*Seoul National University*)

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Vali Lalioti (*University of the Arts London*)
Boyd Branch (*Coventry University*)
Chee Siang Ang (*University of Kent*)
Andrew Thomas (*Royal College of Music*)
Bea Wohl (*University of the Arts London*)
Alexandra Covaci (*University of Kent*)

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Andrew P. McPherson (*Queen Mary University of London*)

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Lotus Zhang (*University of Washington*)
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Augustina Liu (*University of Washington*)
Lucy Jiang (*Human Centered Design and Engineering, University of Washington*)
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Daniela Di Canio (*University of Illinois at Chicago*)

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Fee Christoph (*University of Michigan*)

Amy Ko (*University of Washington*)

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Duri Long (*Georgia Institute of Technology*)
Anthony Teachey (*Georgia Institute of Technology*)
Brian Magerko (*Georgia Institute of Technology*)

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Matthias Soellner (*University of Kassel*)
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Jan Marco Leimeister (*University of St. Gallen*)

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Sayamindu Dasgupta (*University of North Carolina at Chapel Hill*)
Benjamin Mako Hill (*University of Washington*)

Paper229: AlgoSolve: Supporting Subgoal Learning in Algorithmic Problem-Solving with Learnersourced Microtasks

Kabdo Choi (*KAIST*)
Hyungyu Shin (*KAIST*)
Meng Xia (*KAIST*)
Juho Kim (*KAIST*)

Paper230: TunePad Playbooks: Designing Computational Notebooks for Creative Music Coding

Mike Horn (*Northwestern University*)
Amartya Banerjee (*Northwestern University*)
Matthew Brucker (*Northwestern University*)

Paper231: Assisting Teaching Assistants with Automatic Code Corrections

Yana Malysheva (*Washington University in St. Louis*)
Caitlin Kelleher (*Washington University in St. Louis*)

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Kevin Doherty (*Technical University of Denmark*)
Corina Sas (*Lancaster University*)
Gavin Doherty (*Trinity College Dublin*)

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Wei Peng (*Michigan State University*)
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Jessica de Souza (*UCSD*)
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Kellie Morrissey (*University of Limerick*)
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Nusrat Jahan Mim (*Harvard University*)
Dipannita Nandi (*Bangladesh University of Engineering and Technology*)
Sadaf Khan (*Bangladesh University of Engineering and Technology (BUET)*)
Arundhuti Dey (*Miami University*)

Paper239: What Pronouns for Pepper? A Critical Review of Gender/ing in Research

Katie Seaborn (*Tokyo Institute of Technology*)
Alexa Frank (*Independent Scholar*)

Paper240: Experiences of Harm, Healing, and Joy among Black Women and Femmes on Social Media

Tyler Musgrave (*University of Michigan, Ann Arbor*)
Alia Cummings (*University of Michigan, Ann Arbor*)
Sarita Schoenebeck (*University of Michigan*)

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Paper241: A Comparative Evaluation of Interventions Against Misinformation: Augmenting the WHO Checklist

Hendrik Heuer (*University of Bremen*)
Elena Glassman (*Harvard University*)

Paper242: "You have to prove the threat is real": Understanding the needs of Female Journalists and Activists to Document and Report Online Harassment

Nitesh Goyal (*Google Research, Jigsaw, Google*)
Leslie Park (*Genesis 10*)
Lucy Vasserman (*Jigsaw, Google*)

Paper243: Method for Appropriating the Brief Implicit Association Test to Elicit Biases in Users

Tilman Dingler (*University of Melbourne*)
Benjamin Tag (*University of Melbourne*)
David Eccles (*The University of Melbourne*)
Niels van Berkel (*Aalborg University*)
Vassilis Kostakos (*University of Melbourne*)

Paper244: Bridging Contextual and Methodological Gaps on the "Misinformation Beat": Insights from Journalist-Researcher Collaborations at Speed

Melinda McClure Haughey (*University of Washington*)
Martina Povolo (*University of Washington*)
Kate Starbird (*University of Washington*)

Paper245: Birds of a Feather Don't Fact-check Each Other: Partisanship and the Evaluation of News in Twitter's Birdwatch Crowdsourced Fact-checking Program

Jennifer Allen (*Massachusetts Institute of Technology*)
Cameron Martel (*MIT*)
David Rand (*MIT, MIT*)

Papers: Learning Online, Remotely, and Synchronously

Paper246: Designing for Knowledge Construction to Facilitate the Uptake of Open Science: Laying out the Design Space

Leonie Disch (*Know-Center GmbH Research Center for Data-Driven Business & Big Data Analytics*)
Angela Fessel (*Know-Center research center for data-driven business and big data analytics, Graz University of Technology*)
Viktoria Pammer-Schindler (*Graz University of Technology, Know-Center GmbH*)

Paper247: Remote Co-teaching in Rural Classroom: Current Practices, Impacts, and Challenges

Siling Guo (*Lenovo Research*)
Tianchen Sun (*Lenovo Research*)
Jiangtao Gong (*Lenovo Research, Tsinghua University*)
Zhicong Lu (*City University of Hong Kong*)
Liuxin Zhang (*Lenovo Research*)
Qianying Wang (*Lenovo Research*)

Paper248: Innovating Novel Online Social Spaces with Diverse Middle School Girls: Ideation and Collaboration in a Synchronous Virtual Design Workshop

Catherine Grevet Delcourt (*Wellesley College*)
Linda Charmaraman (*Wellesley Centers for Women*)
Sidrah Durrani (*Columbia University*)
Quan Gu (*Wellesley College*)
Le Fan Xiao (*Wellesley College*)

Paper249: Uncovering Instructors' Diverse Practices and Perceptions: A Field Deployment of a Customization-Sharing Platform that Supports Course Management

Laton Vermette (*Simon Fraser University*)
Kavana Ramesh (*Simon Fraser University*)
Joanna McGrenere (*University of British Columbia*)
Parmit Chilana (*Simon Fraser University*)

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Paper250: Driving from a Distance: Challenges and Guidelines for Autonomous Vehicle Teleoperation Interfaces

Felix Tener (*University of Haifa, University of Haifa*)
Joel Lanir (*The University of Haifa, The University of Haifa*)

Paper251: Mediated Visits: Longitudinal Domestic Dwelling with Mobile Robotic Telepresence

Andriana Boudouraki (*University of Nottingham*)
Stuart Reeves (*University of Nottingham*)
Joel Fischer (*University of Nottingham*)
Sean Rintel (*Microsoft Research*)

Paper252: Cultural Influences on Chinese Citizens' Adoption of Digital Contact Tracing: A Human Infrastructure Perspective

Yao Lyu (*Pennsylvania State University, Pennsylvania State University*)
John Carroll (*Pennsylvania State University, Pennsylvania State University*)

Paper253: User Perceptions of Extraversion in Chatbots after Repeated Use

Sarah Völkel (*LMU Munich*)
Ramona Schödel (*LMU Munich*)
Lale Kaya (*LMU Munich*)
Sven Mayer (*LMU Munich*)

Paper254: Drawing Out the Everyday Hyper-[In]Securities of Digital Identity

Claude Heath (*Royal Holloway University of London*)
Lizzie Coles-Kemp (*Royal Holloway University of London*)

Papers: Improving Information Access

Paper255: “It Matches My Worldview”: Examining Perceptions and Attitudes Around Fake Videos

Farhana Shahid (*Cornell University*)
Srujana Kamath (*Independent Researcher*)
Annie Sidotam (*N. Godrej Foundation for Education*)
Vivian Jiang (*Cornell University*)
Alexa Batino (*Cornell University*)
Aditya Vashistha (*Cornell University*)

Paper256: Accost, Accede, or Amplify: Attitudes towards COVID-19 Misinformation on WhatsApp in India

Rama Adithya Varanasi (*Cornell University*)
Joyojeet Pal (*University of Michigan*)
Aditya Vashistha (*Cornell University*)

Paper257: Winds of Change: Seeking, Preserving, and Retelling Indigenous Knowledge Through Self-Organized Online Communities

Lindah Kotut (*University of Washington*)
D. Scott McCrickard (*Virginia Tech*)

Paper258: Investigating Older Adults’ Attitudes towards Crisis Informatics Tools: Opportunities for Enhancing Community Resilience during Disasters

Nurul Suhaimi (*Northeastern University, Universiti Malaysia Pahang*)
Yixuan Zhang (*Georgia Institute of Technology*)
Mary Joseph (*Northeastern University*)
Miso Kim (*Northeastern University*)
Andrea Parker (*Georgia Tech*)
Jacqueline Griffin (*Northeastern University*)

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Paper259: Janus Screen: A Screen with Switchable Projection Surfaces Using Wire Grid Polarizer

Wataru Yamada (*NTT DOCOMO, INC.*)
Sawa Korogi (*NTT DOCOMO, INC.*)
Keiichi Ochiai (*NTT DOCOMO, INC.*)

Paper260: PneuMesh: Pneumatic-driven Truss-based Shape Changing System

Jianzhe Gu (*Carnegie Mellon University*)
Yuyu Lin (*Zhejiang university*)
Qiang Cui (*Tsinghua university*)
Xiaoqian Li (*Zhejiang University*)
Jiaji Li (*Zhejiang University*)
Lingyun Sun (*Zhejiang University*)
Cheng Yao (*Zhejiang University*)
Fangtian Ying (*Zhejiang University*)
Guanyun Wang (*Zhejiang University*)

Lining Yao (*Carnegie Mellon University*)

Paper261: ElectriPop: Low-Cost, Shape-Changing Displays Using Electrostatically Inflated Mylar Sheets

Cathy Mengying Fang (*Carnegie Mellon University*)

Jianzhe Gu (*Carnegie Mellon University*)

Lining Yao (*Carnegie Mellon University*)

Chris Harrison (*Carnegie Mellon University*)

Paper262: Electrical Head Actuation: Enabling Interactive Systems to Directly Manipulate Head Orientation

Yudai Tanaka (*University of Chicago*)

Jun Nishida (*University of Chicago*)

Pedro Lopes (*University of Chicago*)

Paper263: STRAIDE: A Research Platform for Shape-Changing Spatial Displays based on Actuated Strings

Severin Engert (*Technische Universität Dresden*)

Konstantin Klamka (*Technische Universität Dresden*)

Andreas Peetz (*Technische Universität Dresden, Technische Universität Dresden*)

Raimund Dachselt (*Technische Universität Dresden, Technische Universität Dresden*)

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Paper264: “I hope I never need one”: Unpacking Stigma in Aging in Place Technology

Clara Caldeira (*Indiana University*)

Novia Nurain (*Indiana University*)

Kay Connelly (*Indiana University*)

Paper265: Examining Identity as a Variable of Health Technology Research for Older Adults: A Systematic Review

Christina Harrington (*Carnegie Mellon University*)

Aqueasha Martin-Hammond (*Indiana University - Purdue University Indianapolis*)

Kirsten Bray (*Georgia Tech*)

Paper266: “It Feels Like Taking a Gamble”: Exploring Perceptions, Practices, and Challenges of Using Makeup and Cosmetics for People with Visual Impairments

Franklin Mingzhe Li (*Carnegie Mellon University*)

Franchesca Spektor (*Carnegie Mellon University*)

Meng Xia (*KAIST*)

Mina Huh (*KAIST*)

Peter Cederberg (*Carnegie Mellon University*)

Yuqi Gong (*Carnegie Mellon University*)

Kristen Shinohara (*Rochester Institute of Technology*)

Patrick Carrington (*Carnegie Mellon University*)

Paper267: Methods for Evaluating the Fluency of Automatically Simplified Texts with Deaf and Hard-of-Hearing Adults at Various Literacy Levels

Oliver Alonzo (*Rochester Institute of Technology*)

Jessica Trussell (*Rochester Institute of Technology*)

Matthew Watkins (*Rochester Institute of Technology*)

Sooyeon Lee (*Rochester Institute of Technology*)

Matt Huenerfauth (*Rochester Institute of Technology*)

Paper268: “I Shake The Package To Check If It’s Mine”: A Study of Package Fetching Practices and Challenges of Blind and Low Vision People in China

Wentao Lei (*Rochester Institute of Technology*)

Mingming Fan (*Hong Kong University of Science and Technology*)

Juliann Thang (*Rochester Institute of Technology*)

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Paper269: InfraredTags: Embedding Invisible AR Markers and Barcodes Using Low-Cost, Infrared-Based 3D Printing and Imaging Tools

Mustafa Doga Dogan (*MIT CSAIL*)
Ahmad Taka (*MIT CSAIL*)
Michael Lu (*MIT CSAIL*)
Yunyi Zhu (*MIT CSAIL*)
Akshat Kumar (*MIT CSAIL*)
Aakar Gupta (*Facebook Inc*)
Stefanie Mueller (*MIT CSAIL*)

Paper270: Print-A-Sketch: A Handheld Printer for Physical Sketching of Circuits and Sensors on Everyday Surfaces

Narjes Pourjafarian (*Saarland University, Saarland Informatics Campus*)
Marion Koelle (*Saarland Informatics Campus*)
Fjolla Mjaku (*Saarland University, Saarland Informatics Campus*)
Paul Strohmeier (*Saarland Informatics Campus, Max Planck Institute for Informatics, Saarland Informatics Campus*)
Jürgen Steimle (*Saarland University, Saarland Informatics Campus*)

Paper271: FoolProofJoint: Reducing Assembly Errors of Laser Cut 3D Models by Means of Custom Joint Patterns

Keunwoo Park (*Hasso Plattner Institute*)
Conrad Lempert (*Hasso Plattner Institute*)
Muhammad Abdullah (*Hasso Plattner Institute*)
Shohei Katakura (*Hasso Plattner Institute*)
Jotaro Shigeyama (*Hasso Plattner Institute*)
Thijs Roumen (*Hasso Plattner Institute*)
Patrick Baudisch (*Hasso Plattner Institute*)

Paper272: Roman: Making Everyday Objects Robotically Manipulable with 3D-Printable Add-on Mechanisms

Jiahao Li (*UCLA*)
Alexis Samoylov (*University of California, Los Angeles*)
Jeeun Kim (*Texas A&M University*)
Xiang 'Anthony' Chen (*UCLA*)

Paper273: Mobiot: Augmenting Everyday Objects into Moving IoT Devices Using 3D Printed Attachments Generated by Demonstration

Abul Al Arabi (*Texas A&M University*)
Jiahao Li (*UCLA*)
Xiang 'Anthony' Chen (*UCLA*)
Jeeun Kim (*Texas A&M University*)

Papers: Mouth-based Interaction

Paper274: AirRes Mask: A Precise and Robust Virtual Reality Breathing Interface Utilizing Breathing Resistance as Output Modality

Markus Tatzgern (*Salzburg University of Applied Sciences*)
Michael Domhardt (*Salzburg University of Applied Sciences*)
Martin Wolf (*Salzburg University of Applied Sciences*)
Michael Cenger (*Salzburg University of Applied Sciences*)
Gerlinde Emsenhuber (*Salzburg University of Applied Sciences*)
Radomir Dinic (*Salzburg University of Applied Sciences*)
Nathalie Gerner (*Paracelsus Medical University*)
Arnulf Hartl (*Paracelsus Medical University*)

Paper275: Mouth Haptics in VR using a Headset Ultrasound Phased Array

Vivian Shen (*Carnegie Mellon University*)
Craig Shultz (*Carnegie Mellon University*)
Chris Harrison (*Carnegie Mellon University*)

Paper276: What Could Possibly Go Wrong When Interacting with Proactive Smart Speakers? A Case Study Using an ESM Application

Jing Wei (*University of Melbourne*)
Benjamin Tag (*University of Melbourne*)
Johanne Trippas (*The University of Melbourne*)
Tilman Dingler (*University of Melbourne*)
Vassilis Kostakos (*University of Melbourne*)

Paper277: Lattice Menu: A Low-Error Gaze-Based Marking Menu Utilizing Target-Assisted Gaze Gestures on a Lattice of Visual Anchors

Taejun Kim (*School of Computing, KAIST*)
Auejin Ham (*KAIST*)
Sunggeun Ahn (*KAIST*)
Geehyuk Lee (*School of Computing, KAIST*)

Papers: Health Informatics and Visualization

Paper278: Get To The Point! Problem-Based Curated Data Views To Augment Care For Critically Ill Patients

Minfan Zhang (*University of Toronto*)
Daniel Ehrmann (*Hospital for Sick Children*)
Mjaye Mazwi (*Hospital for Sick Children, Hospital for Sick Children*)
Danny Eytan (*Hospital for Sick Children*)
Marzyeh Ghassemi (*MIT*)
Fanny Chevalier (*University of Toronto*)

Paper279: Prediction for Retrospection: Integrating Algorithmic Stress Prediction into Personal Informatics Systems for College Students' Mental Health

Taewan Kim (*KAIST*)
Haesoo Kim (*KAIST*)
Ha Yeon Lee (*Seoul National University*)
Hwarang Goh (*Inha University*)
Shakhboz Abdigapporov (*Inha University*)
Mingon Jeong (*Hanyang University*)
Hyunsung Cho (*Carnegie Mellon University*)
Kyungsik Han (*Hanyang University*)
Youngtae Noh (*KENTECH*)
Sung-Ju Lee (*KAIST*)
Hwajung Hong (*KAIST*)

Paper280: Exploring Perceptions of Cross-Sectoral Data Sharing with People with Parkinson's

Roisin McNaney (*Monash University*)
Catherine Morgan (*University of Bristol*)
Pranav Kulkarni (*Monash University*)
Julio Vega (*University of Pittsburgh*)
Farnoosh Heidarivincheh (*University of Bristol*)
Ryan McConville (*University of Bristol*)
Alan Whone (*University of Bristol*)
Mickey Kim (*University of Bristol*)
Reuben Kirkham (*Monash University*)
Ian Craddock (*University of Bristol*)

Paper281: Personal Dream Informatics: A Self-Information Systems Model of Dream Engagement

Michael Hofer (*University of Colorado Boulder*)
Bryce Schumacher (*University of Colorado Boulder*)
Stephen Volda (*University of Colorado Boulder*)

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Paper282: Lived Experiences of Mental Workload in Everyday Life

Serena Midha (*University of Nottingham*)
Max Wilson (*University of Nottingham*)
Sarah Sharples (*University of Nottingham*)

Paper283: Rethinking Menstrual Trackers Towards Period-Positive Ecologies

Anupriya Tuli (*IIT-Delhi*)
Surbhi Singh (*Sachhi Saheli*)
Rikita Narula (*Sachhi Saheli*)
Neha Kumar (*Georgia Tech*)
Pushpendra Singh (*IIT-Delhi*)

Paper284: Pandemic Displays: Considering Hygiene on Public Touchscreens in the Post-Pandemic Era

Ville Mäkelä (*University of Waterloo, Bundeswehr University Munich*)
Jonas Winter (*LMU Munich*)
Jasmin Schwab (*Bundeswehr University Munich*)
Michael Koch (*Universität der Bundeswehr München*)
Florian Alt (*Bundeswehr University Munich*)

Paper285: Understanding How eHealth Coaches Tailor Support For Weight Loss: Towards the Design of Person-Centered Coaching Systems

Kathleen Ryan (*University College Cork, S3 Connected Health*)
Samantha Dockray (*University College Cork*)
Conor Linehan (*University College Cork*)

Paper286: Embodied Negotiations, Practices and Experiences Interacting with Pregnancy Care Infrastructures in South India

Naveen Bagalkot (*Srishti Institute of Art, Design, & Technology*)
Syeda Zainab Akbar (*Microsoft Research*)
Swati Sharma (*Srishti Institute of Art, Design, & Technology*)
Nicola Mackintosh (*University of Leicester*)
Deirdre Harrington (*University of Strathclyde*)
Paula Griffiths (*Loughborough University*)
Judith Angelitta Noronha (*Manipal Academy of Higher Education*)
Nervo Verdezoto (*Cardiff University*)

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Paper287: SonarID: Using Sonar to Identify Fingers on a Smartwatch

Jiwan Kim (*UNIST, UNIST*)
Ian Oakley (*UNIST, UNIST*)

Paper288: SilentSpeller: Towards mobile, hands-free, silent speech text entry using electropalatography

Naoki Kimura (*The University of Tokyo*)
Tan Gemicioglu (*Georgia Institute of Technology*)
Jonathan Womack (*Georgia Institute of Technology*)
Yuhui Zhao (*Georgia Institute of Technology*)
Richard Li (*University of Washington*)
Abdelkareem Bedri (*Carnegie Mellon University*)
Zixiong Su (*The University of Tokyo*)
Alex Olwal (*Google Inc.*)
Jun Rekimoto (*The University of Tokyo*)
Thad Starner (*Georgia Institute of Technology*)

Paper289: ReflecTouch: Detecting Grasp Posture of Smartphone Using Corneal Reflection Images

Xiang Zhang (*Keio University*)
Kaori Ikematsu (*Yahoo Japan Corporation*)

Kunihiro Kato (*Tokyo University of Technology*)
Yuta Sugiura (*Keio University*)

Paper290: FaceOri: Tracking Head Position and Orientation Using Ultrasonic Ranging on Earphones

Yuntao Wang (*Tsinghua University*)
Jiexin Ding (*Tsinghua University*)
Ishan Chatterjee (*University of Washington*)
Farshid Salemi Parizi (*University of Washington*)
Yuzhou Zhuang (*Tsinghua University*)
Yukang Yan (*Tsinghua University*)
Shwetak Patel (*University of Washington*)
Yuanchun Shi (*Tsinghua University*)

Paper291: More Errors vs. Longer Commands: The Effects of Repetition and Reduced Expressiveness on Input Interpretation Error, Learning, and User Preference

Kevin Lam (*University of Saskatchewan*)
Carl Gutwin (*University of Saskatchewan*)
Madison Klarkowski (*University of Saskatchewan*)
Andy Cockburn (*University of Canterbury*)

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Paper292: ShapeFindAR: Exploring In-Situ Spatial Search for Physical Artifact Retrieval using Mixed Reality

Evgeny Stemasov (*Ulm University*)
Tobias Wagner (*Ulm University*)
Jan Gugenheimer (*Institut Polytechnique de Paris*)
Enrico Rukzio (*University of Ulm*)

Paper293: Investigating Potentials of Shape-Changing Displays for Sound Zones

Stine Johansen (*Aalborg University*)
Timothy Merritt (*Aalborg University*)
Rune Jacobsen (*Aalborg University*)
Peter Axel Nielsen (*Aalborg University*)
Jesper Kjeldskov (*Aalborg University*)

Paper294: Do You See What I Hear? – Peripheral Absolute and Relational Visualisation Techniques for Sound Zones

Rune Jacobsen (*Aalborg University*)
Niels van Berkel (*Aalborg University*)
Mikael B. Skov (*Aalborg University*)
Stine Johansen (*Aalborg University*)
Jesper Kjeldskov (*Aalborg University*)

Paper295: Consent in the Age of AR: Investigating The Comfort With Displaying Personal Information in Augmented Reality

Jan Ole Rixen (*Institute of Media Informatics*)
Mark Colley (*Ulm University*)
Ali Askari (*Ulm University*)
Jan Gugenheimer (*Institut Polytechnique de Paris*)
Enrico Rukzio (*University of Ulm*)

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Paper296: "Should I visit the clinic?": Analyzing WhatsApp-mediated online health support for Expectant and New Mothers in Rural India

Deepika Yadav (*IIIT-Delhi*)
Kirti Dabas (*IIIT - DELHI*)
Purna Malik (*IIIT-Delhi*)

Anushka Bhandari (IIIT)
Pushpendra Singh (IIIT-Delhi)

Paper297: Dare to Dream, Dare to Livestream: How E-Commerce Livestreaming Empowers Chinese Rural Women

Ningjing Tang (*Tsinghua University*)
Lei TAO (*Department of Public Policy, City University of Hong Kong*)
Bo Wen (*City University of Hong Kong*)
Zhicong Lu (*City University of Hong Kong*)

Paper298: Feeling Proud, Feeling Embarrassed: Experiences of Low-income Women with Crowd Work

Rama Adithya Varanasi (*Cornell University*)
Divya Siddarth (*Microsoft*)
Vivek Seshadri (*Microsoft Research India*)
Kalika Bali (*Microsoft Research Lab India*)
Aditya Vashistha (*Cornell University*)

Paper299: Opportunities and Challenges of Automatic Speech Recognition Systems for Low-Resource Language Speakers

Thomas Reitmaier (*Swansea University*)
Electra Wallington (*University of Edinburgh*)
Dani Kalarikalayil Raju (*Studio Hasi*)
Ondrej Klejch (*University of Edinburgh*)
Jennifer Pearson (*Swansea University*)
Matt Jones (*Swansea University*)
Peter Bell (*University of Edinburgh*)
Simon Robinson (*Swansea University*)

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Paper300: Coordination and Collaboration: How do Volunteer Moderators Work as a Team in Live Streaming Communities?

Jie Cai (*New Jersey Institute of Technology*)
Donghee Yvette Wohn (*New Jersey Institute of Technology*)

Paper301: Shared User Interfaces of Physiological Data: Systematic Review of Social Biofeedback Systems and Contexts in HCI

Clara Moge (*University College London*)
Katherine Wang (*University College London*)
Youngjun Cho (*UCL*)

Paper302: From Who You Know to What You Read: Augmenting Scientific Recommendations with Implicit Social Networks

Hyeonsu Kang (*Carnegie Mellon University*)
Rafal Kocielnik (*University of Washington*)
Andrew Head (*Allen Institute for AI*)
Jiangjiang Yang (*Allen Institute of AI*)
Matt Latzke (*Allen Institute for AI*)
Aniket Kittur (*Carnegie Mellon University*)
Daniel Weld (*Allen Institute for Artificial Intelligence, University of Washington*)
Doug Downey (*Allen Institute for Artificial Intelligence, Northwestern University*)
Jonathan Bragg (*Allen Institute for Artificial Intelligence*)

Paper303: Follow the Leader: Technical and Inspirational Leadership in Open Source Software

Jérôme Hergueux (*French National Center for Scientific Research (CNRS, BETA lab), ETH Zurich*)
Samuel Kessler (*University of Oxford*)

Papers: Audio for Accessibility

Paper304: TalkTive: A Conversational Agent Using Backchannels to Engage Older Adults in Neurocognitive Disorders Screening

Zijian Ding (*University of Maryland*)
Jiawen Kang (*Department of Systems Engineering and Engineering Management*)
Tinky Oi Ting HO (*The Chinese University of Hong Kong*)
Ka Ho Wong (*The Chinese University of Hong Kong*)
Helene Fung (*Chinese University of Hong Kong*)
Helen Meng (*CUHK*)
Xiaojuan Ma (*Hong Kong University of Science and Technology*)

Paper305: ProtoSound: A Personalized and Scalable Sound Recognition System for Deaf and Hard-of-Hearing Users

Dhruv Jain (*University of Washington, Google*)
Khoa Nguyen (*University of Washington*)
Steven Goodman (*University of Washington*)
Rachel Grossman-Kahn (*University of Washington*)
Hung Ngo (*University of Washington*)
Aditya Kusupati (*University of Washington*)
Ruofei Du (*Google*)
Alex Olwal (*Google Inc.*)
Leah Findlater (*University of Washington*)
Jon Froehlich (*University of Washington*)

Paper306: Analyzing Deaf and Hard-of-Hearing Users' Behavior, Usage, and Interaction with a Personal Assistant Device that Understands Sign-Language Input

Abraham Glasser (*Rochester Institute of Technology*)
Matthew Watkins (*Rochester Institute of Technology*)
Kira Hart (*Rochester Institute of Technology*)
Sooyeon Lee (*Rochester Institute of Technology*)
Matt Huenerfauth (*Rochester Institute of Technology*)

Paper307: Polite or Direct? Conversation Design with Politeness Theory on a Smart Display for Older Adults

Yaxin Hu (*University of Wisconsin-Madison*)
Yuxiao Qu (*University of Wisconsin-Madison*)
Adam Maus (*University of Wisconsin - Madison*)
Bilge Mutlu (*University of Wisconsin-Madison*)

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Paper308: Mixplorer: Scaffolding Design Space Exploration through Genetic Recombination of Multiple Peoples' Designs to Support Novices' Creativity

Kevin Gonyop Kim (*EPFL*)
Richard Davis (*EPFL*)
Alessia Eletta Coppi (*Swiss Federal Institute for Vocational Education and Training*)
Alberto Cattaneo (*Swiss Federal University for Vocational Education and Training*)
Pierre Dillenbourg (*EPFL*)

Paper309: Bursting Scientific Filter Bubbles: Boosting Innovation Via Novel Author Discovery

Jason Portenoy (*University of Washington*)
Marissa Radensky (*University of Washington*)
Jevin West (*University of Washington*)
Eric Horvitz (*Microsoft Research*)
Daniel Weld (*University of Washington, Allen Institute for Artificial Intelligence*)
Tom Hope (*Allen Institute, University of Washington*)

Paper310: Elements of XR Prototyping: Characterizing the Role and Use of Prototypes in Augmented and Virtual Reality Design

Veronika Krauß (*University of Siegen, Bonn-Rhein Sieg University of Applied Science*)
Michael Nebeling (*University of Michigan*)
Florian Jasche (*University of Siegen*)
Alexander Boden (*Bonn-Rhein Sieg University of Applied Science, Fraunhofer Institute for Applied Information Technology FIT*)

Paper311: StoryDrawer: A Child-AI Collaborative Drawing System to Support Children's Creative Visual Storytelling

Chao Zhang (*Zhejiang University*)
Cheng Yao (*Zhejiang University*)
Jiayi Wu (*Zhejiang University*)
Weijia Lin (*Zhejiang University*)
Lijuan Liu (*Zhejiang University*)
Ge Yan (*Zhejiang University*)
Fangtian Ying (*Hubei University of Technology*)

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Paper312: Understanding the Situated Practices of School Technology Leaders in the Early Stages of Educational Technology Adoption

Seray Ibrahim (*University College London*)
Asimina Vasalou (*University College London*)
Laura Benton (*University College London*)

Paper313: Glancee: An Adaptable System for Instructors to Grasp Student Learning Status in Synchronous Online Classes

Shuai Ma (*The Hong Kong University of Science and Technology*)
Taichang Zhou (*The Hong Kong University of Science and Technology*)
Fei Nie (*The Hong Kong University of Science and Technology*)
Xiaojuan Ma (*The Hong Kong University of Science and Technology*)

Paper314: Can Anybody Help Me?: Using Community Help Desk Call Records to Examine the Impact of Digital Divides During a Global Pandemic

Jacob Biehl (*University of Pittsburgh*)
Rosta Farzan (*University of Pittsburgh*)
Yingfan Zhou (*University of Pittsburgh*)

Paper315: "Hartal (Strike) Happens Here Everyday": Understanding Impact of Disruption on Education in Kashmir

Asra Wani (*IIIT-Delhi*)
Divyanshu Kumar Singh (*IIIT-Delhi*)
Pushpendra Singh (*IIIT-Delhi*)

Paper316: "I happen to be one of 47.8%": Social-Emotional and Data Reasoning in Middle School Students' Comics about Friendship

Ralph Vacca (*Fordham University*)
Kayla DesPortes (*New York University*)
Marian Tes (*New York University*)
Megan Silander (*Education Development Center*)
Camillia Matuk (*New York University*)
Anna Amato (*New York University*)
Peter Woods (*Massachusetts Institute of Technology*)

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Paper317: News Informatics: Engaging Individuals with Data-Rich News Content through Interactivity in Source, Medium, and Message

S. Shyam Sundar (*The Pennsylvania State University*)
Haiyan Jia (*Lehigh University*)
Saraswathi Bellur (*University of Connecticut*)
Jeeyun Oh (*University of Texas at Austin*)
Hyang-Sook Kim (*Towson University*)

Paper318: "Merging Results Is No Easy Task": An International Survey Study of Collaborative Data Analysis Practices Among UX Practitioners

Emily Kuang (*Rochester Institute of Technology*)

Xiaofu Jin (*Hong Kong University of Science and Technology*)
Mingming Fan (*Hong Kong University of Science and Technology*)

Paper319: Optimizing the Use of the Sentence Completion Survey Technique in User Research: A Case Study on the Experience of E-Reading

Carine Lallemand (*University of Luxembourg, Eindhoven University of Technology*)
Emeline Mercier (*Ecole Normale Supérieure de Lyon*)

Paper320: Constrained Life in a Multifarious Environment - A Closer Look at the Lives of Autistic College Students

Shameem Ahmed (*Western Washington University*)
Md Monsur Hossain (*Flexport Inc.*)
Cody Pragner (*Western Washington University*)
Mitch Kimball (*Expeditors*)
Ashima Shrivastava (*Pantheon*)
Joseph Gildner (*VMWare*)
Sean McCulloch (*Allen Institute for Brain Science*)
Moushumi Sharmin (*Western Washington University*)

Paper321: Keep it Short: A Comparison of Voice Assistants' Response Behavior

Gabriel Haas (*Ulm University*)
Michael Rietzler (*Institute of Mediainformatics*)
Matt Jones (*Swansea University*)
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Paper322: When is ML data good?: Valuing in Public Health Datafication

Divy Thakkar (*Google Research*)
Azra Ismail (*Georgia Tech*)
Pratyush Kumar (*Indian Institute of Technology*)
Alex Hanna (*Google*)
Nithya Sambasivan (*Google Research India*)
Neha Kumar (*Georgia Tech*)

Paper323: Forgetting Practices in the Data Sciences

Michael Muller (*IBM Research*)
Angelika Strohmayer (*Northumbria University*)

Paper324: Unmaking as Agonism: Using Participatory Design with Youth to Surface Difference in an Intergenerational Urban Context

Samar Sabie (*Cornell Tech*)
Steven Jackson (*Cornell University*)
Wendy Ju (*Cornell Tech*)
Tapan Parikh (*Cornell Tech*)

Paper325: Insights and Opportunities for HCI Research into Hurricane Risk Communication

Robert Soden (*University of Toronto*)
Lydia Chilton (*Columbia University*)
Scott Miles (*University of Washington*)
Rebecca Bicksler (*Co-Risk Labs*)
Kaira Ray Villanueva (*Columbia University*)
Melissa Bica (*University of Colorado Boulder*)

Paper326: Consumption Experiences in the Research Process

Sandy Gould (*Cardiff University*)

Papers: Mental Health and Wellbeing of Young People

Paper327: Design of Digital Workplace Stress-Reduction Intervention Systems: Effects of Intervention Type and Timing

Esther Howe (*Microsoft Research, University of California, Berkeley*)
Jina Suh (*Microsoft Research, University of Washington*)
Mehrab Bin Morshed (*Microsoft Research, Georgia Institute of Technology*)
Daniel McDuff (*Microsoft*)
Kael Rowan (*Microsoft Research*)
Javier Hernandez (*Microsoft Research*)
Marah Abdin (*Microsoft Research*)
Gonzalo Ramos (*Microsoft Research*)
Tracy Tran (*Microsoft Research*)
Mary Czerwinski (*Microsoft Research*)

Paper328: "I Wanted to See How Bad It Was": Online Self-screening as a Critical Transition Point Among Young Adults with Common Mental Health Conditions

Kaylee Kruzan (*Northwestern University*)
Jonah Meyerhoff (*Northwestern University*)
Theresa Nguyen (*Mental Health America*)
Madhu Reddy (*University of California, Irvine*)
David Mohr (*Northwestern University*)
Rachel Kornfield (*Northwestern University*)

Paper329: Meeting Users Where They Are: User-centered Design of an Automated Text Messaging Tool to Support the Mental Health of Young Adults

Rachel Kornfield (*Northwestern University*)
Jonah Meyerhoff (*Northwestern University*)
Hannah Studd (*Northwestern University*)
Ananya Bhattacharjee (*University of Toronto*)
Joseph Williams (*University of Toronto*)
Madhu Reddy (*University of California, Irvine*)
David Mohr (*Northwestern University*)

Paper330: Exploring Design Opportunities for Supporting Mental Wellbeing Among East Asian University Students in Canada

Sang-Wha Sien (*University of British Columbia*)
Shalini Mohan (*University of British Columbia*)
Joanna McGrenere (*University of British Columbia*)

Paper331: Exploring Situated & Embodied Support for Youth's Mental Health: Design Opportunities for Interactive Tangible Devices

Claudia Daudén Roquet (*King's College London*)
Nikki Theofanopoulou (*King's College London*)
Jaimie Freeman (*University of Oxford*)
Jessica Schleider (*Stony Brook University*)
James J. Gross (*Stanford University*)
Katie Davis (*University of Washington*)
Ellen Townsend (*University of Nottingham*)
Petr Slovak (*King's College London*)

Papers: Sustainability

Paper332: Hitting the Triple Bottom Line: Widening the HCI Approach to Sustainability

Sabrina Scuri (*ITI / LARSyS*)
Marta Ferreira (*ITI / LARSyS, Instituto Superior Técnico - U. Lisbon*)
Nuno Nunes (*ITI / LARSyS, Instituto Superior Técnico - U. Lisbon*)
Valentina Nisi (*ITI / LARSyS, Instituto Superior Técnico - U. Lisbon*)
Cathy Mulligan (*ITI / LARSyS, Instituto Superior Técnico - U. Lisbon*)

Paper333: Exploring Renewable Energy Futures through Household Energy Resilience

Hanna Hasselqvist (*Chalmers University of Technology*)
Sara Renström (*RISE Research Institutes of Sweden*)
Maria Håkansson (*RISE Research Institutes of Sweden*)
Helena Strömberg (*Chalmers University of Technology*)

Paper334: Negotiating sustainable futures in communities through participatory speculative design and experiments in living

Simran Chopra (*Northumbria University*)
Rachel Clarke (*Newcastle University*)
Adrian Clear (*NUI Galway*)
Sara Heitlinger (*City, University of London*)
Ozge Dilaver (*Northumbria University*)
Christina Vasiliou (*Northumbria University*)

Paper335: Towards Digital Environmental Stewardship: the Work of Caring for the Environment in Waste Management

Chiara Rossitto (*Stockholm University*)
Rob Comber (*KTH Royal Institute of Technology*)
Jakob Tholander (*Stockholm University*)
Mattias Jacobsson (*Digital Systems / Connected Intelligence*)

Papers: Text & Pen

Paper336: Style Blink: Exploring Digital Inking of Structured Information via Handcrafted Styling as a First-Class Object

Hugo Romat (*Microsoft*)
Nicolai Marquardt (*Microsoft Research*)
Ken Hinckley (*Microsoft Research*)
Nathalie Henry Riche (*Microsoft Research*)

Paper337: TapGazer: Text Entry with Finger Tapping and Gaze-directed Word Selection

Zhenyi He (*New York University, New York University*)
Christof Lutteroth (*University of Bath, University of Bath*)
Ken Perlin (*New York University, New York University*)

Paper338: Passages: Interacting with Text Across Documents

Han Han (*Université Paris-Saclay, CNRS, Inria*)
Junhang Yu (*Université Paris-Saclay, CNRS, Inria*)
Alexandre Ciorascu (*Université Paris-Saclay, CNRS, Inria*)
Raphael Bournet (*Université Paris-Saclay, CNRS, Inria*)
Wendy Mackay (*Université Paris-Saclay, CNRS, Inria*)
Michel Beaudouin-Lafon (*Université Paris-Saclay, CNRS, Inria*)

Paper339: TypeAnywhere: A QWERTY-Based Text Entry Solution for Ubiquitous Computing

Mingrui Zhang (*University of Washington*)
Shumin Zhai (*Google*)
Jacob Wobbrock (*University of Washington*)

Papers: Health, Medicine, and Therapy

Paper340: The Sound of Hallucinations: Toward a more convincing emulation of internalized voices

Hyejin Lee (*McGill University, McGill University*)
Ruixi Jiang (*McGill University, McGill University*)
Yongjae Yoo (*McGill University, McGill University*)
Max Henry (*McGill University, McGill University*)
Jeremy Cooperstock (*McGill University, McGill University*)

Paper341: MyDJ: Sensing Food Intakes with an Attachable on Your Eyeglass Frame

Jaemin Shin (*KAIST*)
Seungjoo Lee (*KAIST*)
Taesik Gong (*KAIST*)
Hyungjun Yoon (*KAIST*)
Hyunchul Roh (*DYPHI Inc.*)
Andrea Bianchi (*KAIST*)
Sung-Ju Lee (*KAIST*)

Paper342: Towards Design Guidelines for Effective Health-Related Data Videos: An Empirical Investigation of Affect, Personality, and Video Content

Samar Sallam (*University of Manitoba*)
Yumiko Sakamoto (*University of Manitoba*)
Jason Leboe-McGowan (*University of Manitoba*)
Celine Latulipe (*University of Manitoba*)
Pourang Irani (*University of British Columbia (Okanagan)*)

Paper343: Investigating and Validating On-body Temperature Sensors for Personal Heat Exposure Tracking

Dana Habeeb (*Indiana University*)
James Clawson (*Indiana University*)
Arash Zakeresfahani (*Indiana University*)
Zebulon Holtz (*Indiana University*)

Paper344: Designing and Evaluating a Chatbot for Survivors of Image-Based Sexual Abuse

Wookjae Maeng (*Seoul National University*)
Joonhwan Lee (*Seoul National University*)

Papers: Input Techniques

Paper345: A Conversational Approach for Modifying Service Mashups in IoT Environments

Sanghoon Kim (*Korea Advanced Institute of Science and Technology (KAIST)*)
In-Young Ko (*Korea Advanced Institute of Science and Technology (KAIST)*)

Paper346: Improving Finger Stroke Recognition Rate for Eyes-Free Mid-Air Typing in VR

Yatharth Singhal (*University of Texas at Dallas*)
Richard Noeske (*The University of Texas at Dallas*)
Ayush Bhardwaj (*The University of Texas at Dallas*)
Jin Ryong Kim (*The University of Texas at Dallas*)

Paper347: TriboTouch: Micro-Patterned Surfaces for Low Latency Touchscreens

Craig Shultz (*Carnegie Mellon University*)
Daehwa Kim (*Carnegie Mellon University*)
Karan Ahuja (*Carnegie Mellon University*)
Chris Harrison (*Carnegie Mellon University*)

Paper348: HybridTrak: Adding Full-Body Tracking to VR Using an Off-the-Shelf Webcam

Jackie Yang (*Stanford University*)
Tuochao Chen (*EECS*)
Fang Qin (*Carnegie Mellon University*)
Monica Lam (*Stanford University*)
James Landay (*Stanford University*)

Paper349: Integrating Gaze and Speech for Enabling Implicit Interactions

Anam Ahmad Khan (*The University of Melbourne*)
Joshua Newn (*The University of Melbourne*)
James Bailey (*The University of Melbourne*)
Eduardo Velloso (*University of Melbourne*)

Papers: Helping Doctors and Caregivers

Paper350: 'Are They Doing Better In The Clinic Or At Home': Understanding Clinicians' Needs When Visualizing Wearable Sensor Data Used In Remote Gait Assessments For People With Multiple Sclerosis

Ayanna Seals (*New York University*)
Giuseppina Piloni (*New York University*)
Jin Kim (*New York University*)
Raul Sanchez (*New York University*)
John-Ross Rizzo (*NYU Grossman School of Medicine*)
Leigh Charvet (*New York University*)
Oded Nov (*New York University*)
Graham Dove (*New York University*)

Paper351: Investigating Clutching Interactions for Touchless Medical Imaging Systems

Sean Cronin (*Trinity College Dublin*)
Euan Freeman (*University of Glasgow*)
Gavin Doherty (*Trinity College Dublin*)

Paper352: Designing Flexible Longitudinal Regimens: Supporting Clinician Planning for Discontinuation of Psychiatric Drugs

Eunkyung Jo (*University of California, Irvine*)
Myeonghan Ryu (*Independent researcher*)
Georgia Kenderova (*University of Washington*)
Samuel So (*University of Washington*)
Bryan Shapiro (*University of California, Irvine*)
Alexandra Papoutsaki (*Pomona College*)
Daniel Epstein (*University of California, Irvine*)

Paper353: A State-Based Medication Routine Framework

Clara Caldeira (*Indiana University*)
Pallabi Bhowmick (*Indiana University*)
Priya Komarlingam (*Cuemed Inc*)
Katie Siek (*Indiana University*)

Papers: Interacting with VR

Paper354: In-Depth Mouse: Integrating Desktop Mouse into Virtual Reality

Qian Zhou (*Autodesk Research*)
George Fitzmaurice (*Autodesk Research*)
Fraser Anderson (*Autodesk Research*)

Paper355: OVRlap: Perceiving Multiple Locations Simultaneously to Improve Interaction in VR

Jonas Schjerlund (*University of Copenhagen*)
Kasper Hornbæk (*University of Copenhagen*)
Joanna Bergström (*University of Copenhagen*)

Paper356: ImpactVest: Rendering Spatio-Temporal Multilevel Impact Force Feedback on Body in VR

Hsin-Ruey Tsai (*National Chengchi University*)
Yu-So Liao (*National Chengchi University*)
Chieh Tsai (*National Chengchi University*)

Paper357: Kuiper Belt: Utilizing the "Out-of-natural Angle" Region in the Eye-gaze Interaction for Virtual Reality

Myunguen Choi (*Hokkaido University*)
Daisuke Sakamoto (*Hokkaido University*)
Tetsuo Ono (*Hokkaido University*)

Paper358: Beyond Being Real: A Sensorimotor Control Perspective on Interactions in Virtual Reality

Parastoo Abtahi (*Stanford University*)
Sidney Hough (*Stanford University*)

James Landay (*Stanford University*)
Sean Follmer (*Stanford University*)

Papers: Models and Theories

Paper359: Computational Rationality as a Theory of Interaction

Antti Oulasvirta (*Aalto University*)
Jussi Jokinen (*University of Jyväskylä*)
Andrew Howes (*University of Birmingham*)

Paper360: There Is No First- or Third-Person View in Virtual Reality: Understanding the Perspective Continuum

Matthias Hoppe (*LMU Munich*)
Andrea Baumann (*LMU Munich*)
Patrick Tamunjoh (*LMU Munich*)
Tonja-Katrin Machulla (*TU Dortmund*)
Paweł W. Woźniak (*Chalmers University of Technology*)
Albrecht Schmidt (*LMU Munich*)
Robin Welsch (*LMU Munich*)

Paper361: Understanding and Modeling Viewers' First Impressions with Images in Online Medical Crowdfunding Campaigns

Qingyu Guo (*Hong Kong University of Science and Technology*)
Siyuan Zhou (*Hong Kong University of Science and Technology*)
Yifeng Wu (*The Hong Kong University of Science and Technology*)
Zhenhui Peng (*Sun Yat-Sen University, Aalto University*)
Xiaojuan Ma (*Hong Kong University of Science and Technology*)

Paper362: Rediscovering Affordance: A Reinforcement Learning Perspective

Yi-Chi Liao (*Aalto University*)
Kashyap Todi (*Aalto University*)
Aditya Acharya (*Aalto University*)
Antti Keurulainen (*Aalto University*)
Andrew Howes (*University of Birmingham*)
Antti Oulasvirta (*Aalto University*)

Paper363: To Trust or to Stockpile: Modeling Human-Simulation Interaction in Supply Chain Shortages

Omid Mohaddesi (*Northeastern University*)
Jacqueline Griffin (*Northeastern University*)
Ozlem Ergun (*Northeastern University*)
David Kaeli (*Northeastern University*)
Stacy Marsella (*Northeastern University*)
Casper Harteveld (*Northeastern University*)

Papers: Out and About

Paper364: Adorned in Memes: Exploring the Adoption of Social Wearables in Nordic Student Culture

Felix Epp (*Aalto University*)
Anna Kantosalo (*Aalto University, Helsinki University*)
Nehal Jain (*Aalto University*)
Andrés Lucero (*Aalto University*)
Elisa Mekler (*Aalto University*)

Paper365: Hitting Pause: How User Perceptions of Collaborative Playlists Evolved in the United States During the COVID-19 Pandemic

So Yeon Park (*Stanford University*)
Emily Redmond (*Stanford University*)
Jonathan Berger (*Stanford University*)

Blair Kaneshiro (*Stanford University*)

Paper366: BikeAR: Understanding Cyclists' Crossing Decision-Making at Uncontrolled Intersections using Augmented Reality

Andrii Matviienko (*Technical University of Darmstadt*)
Florian Müller (*TU Darmstadt*)
Dominik Schön (*TU Darmstadt*)
Paul Seesemann (*Technical University of Darmstadt*)
Sebastian Günther (*TU Darmstadt*)
Max Mühlhäuser (*TU Darmstadt*)

Paper367: Effects of Pedestrian Behavior, Time Pressure, and Repeated Exposure on Crossing Decisions in Front of Automated Vehicles Equipped with External Communication

Mark Colley (*Ulm University*)
Elvedin Bajrovic (*Ulm University*)
Enrico Rukzio (*University of Ulm*)

Paper368: FlexNav: Flexible Navigation and Exploration through Connected Runnable Zones

Jutta Willamowski (*Naver Labs Europe*)
Shreepriya Gonzalez-Jimenez (*Naver Labs Europe*)
Christophe Legras (*Naver Labs Europe*)
Danilo Gallo (*Naver Labs Europe*)

Papers: Improving the Built and Natural Environments

Paper369: Beyond Virtual Bazaar: How Social Commerce Promotes Inclusivity for the Traditionally Underserved Community in Chinese Developing Regions

Zhilong Chen (*Tsinghua University, Tsinghua University*)
Hancheng Cao (*Stanford University, Stanford University*)
Xiaochong Lan (*Tsinghua University, Tsinghua University*)
Zhicong Lu (*City University of Hong Kong, City University of Hong Kong*)
Yong Li (*Tsinghua University, Tsinghua University*)

Paper370: AI Beyond Deus ex Machina - Reimagining Intelligence in Future Cities with Urban Experts

Jakub Mlynar (*Charles University, Charles University*)
farzaneh bahrami (*UCL*)
André Ourednik (*University of Fribourg*)
Nico Mutzner (*Royal Holloway, University of London*)
Himanshu Verma (*EPFL*)
Hamed Alavi (*University of Amsterdam, University of Fribourg*)

Paper371: Designing Tools and Interfaces for Ecological Restoration: An Investigation into the Opportunities and Constraints for Technological Interventions

Aditi Maheshwari (*Accenture Labs*)
Abhay Aggarwal (*Accenture Labs, University of California, Berkeley*)
Andreea Danielescu (*Accenture Labs*)

Paper372: RMS: Removing Barriers to Analyze the Availability and Surge Pricing of Ridesharing Services

Hassan Ali Khan (*North Carolina State University*)
Hassan Iqbal (*North Carolina State University*)
Muhammad Shahzad (*North Carolina State University*)
Guoliang Jin (*North Carolina State University*)

Paper373: Outside Where? A Survey of Climates and Built Environments in Studies of HCI outdoors

Michael Jones (*Brigham Young U.*)
Meredith Von Feldt (*Brigham Young University-Provo, UT*)
Natalie Andrus (*Brigham Young University-Provo, UT*)

Papers: User Modeling

Paper374: Semantic Gap in Predicting Mental Wellbeing through Passive Sensing

Vedant Das Swain (*Georgia Institute of Technology*)
Victor Chen (*Georgia Institute of Technology*)
Shrija Mishra (*Georgia Institute of Technology*)
Stephen Mattingly (*University of Notre Dame*)
Gregory Abowd (*Northeastern University*)
Munmun De Choudhury (*Georgia Institute of Technology, Georgia Tech*)

Paper375: Round Numbers Can Sharpen Cognition

Huy Nguyen (*Carnegie Mellon University*)
Jake Hofman (*Microsoft Research*)
Daniel Goldstein (*Microsoft Research*)

Paper376: Probability Weighting in Interactive Decisions: Evidence for Overuse of Bad Assistance, Underuse of Good Assistance

Andy Cockburn (*University of Canterbury*)
Philip Quinn (*Google*)
Carl Gutwin (*University of Saskatchewan*)
Zhe Chen (*University of Canterbury*)
Pang Suwanaposee (*University of Canterbury*)

Paper377: Multifractal Mice: Inferring Task Engagement and Dimensions of Readiness-to-hand from Hand Movement

Dan Bennett (*University of Bristol*)
Anne Roudaut (*University of Bristol*)
Oussama Metatla (*University of Bristol*)

Paper378: Investigating the Tradeoffs of Everyday Text-Entry Collection Methods

André Rodrigues (*Universidade de Lisboa*)
Hugo Nicolau (*Universidade de Lisboa*)
André Santos (*University of Lisbon*)
Diogo Branco (*Universidade de Lisboa*)
Jay Rainey (*Newcastle University*)
David Verweij (*Newcastle University*)
Jan Smeddinck (*Newcastle University*)
Kyle Montague (*Northumbria University*)
Tiago Guerreiro (*University of Lisbon*)

Papers: Creativity Support

Paper379: “I don’t want to feel like I’m working in a 1960s factory”: The Practitioner Perspective on Creativity Support Tool Adoption

Srishti Palani (*Autodesk Research, University of California*)
David Ledo (*Autodesk Research*)
George Fitzmaurice (*Autodesk Research*)
Fraser Anderson (*Autodesk Research*)

Paper380: FlatMagic: Improving Flat Colorization through AI-driven Design for Digital Comic Professionals

Chuan Yan (*George Mason University*)
John Chung (*University of Michigan*)
Yoon Kiheon (*Pusan National University*)
Yotam Gingold (*George Mason University*)
Eytan Adar (*University of Michigan*)
Sungsoo Ray Hong (*George Mason University*)

Paper381: Supercharging Trial-and-Error for Learning Complex Software Applications

Damien Masson (*Autodesk Research, University of Waterloo*)
Jo Vermeulen (*Autodesk Research*)

George Fitzmaurice (*Autodesk Research*)
Justin Matejka (*Autodesk Research*)

Paper382: Paper Trail: An Immersive Authoring System for Augmented Reality Instructional Experiences

Shwetha Rajaram (*University of Michigan*)
Michael Nebeling (*University of Michigan*)

Paper383: A Layered Authoring Tool for Stylized 3D animations

Jiaju Ma (*Brown University, Adobe Research*)
Li-Yi Wei (*Adobe Research*)
Rubaiat Habib Kazi (*Adobe Research*)

Papers: Natural Language

Paper384: Design Guidelines for Prompt Engineering Text-to-Image Generative Models

Vivian Liu (*Columbia University, Columbia University*)
Lydia Chilton (*Columbia University, Columbia University*)

Paper385: AI Chains: Transparent and Controllable Human-AI Interaction by Chaining Large Language Model Prompts

Tongshuang Wu (*University of Washington, University of Washington*)
Michael Terry (*Google, Google*)
Carrie Cai (*Google, Google*)

Paper386: Discovering the Syntax and Strategies of Natural Language Programming with Generative Language Models

Ellen Jiang (*Google*)
Edwin Toh (*Google*)
Alejandra Molina (*Google*)
Kristen Olson (*Google*)
Claire Kayacik (*Google*)
Aaron Donsbach (*Google*)
Carrie Cai (*Google*)
Michael Terry (*Google*)

Paper387: Towards Complete Icon Labeling in Mobile Applications

Jieshan Chen (*Australian National University*)
Amanda Swearngin (*Apple*)
Jason Wu (*Apple*)
Titus Barik (*Apple*)
Jeffrey Nichols (*Apple Inc*)
Xiaoyi Zhang (*Apple Inc*)

Paper388: CoAuthor: Designing a Human-AI Collaborative Writing Dataset for Exploring Language Model Capabilities

Mina Lee (*Stanford University*)
Percy Liang (*Stanford University*)
Qian Yang (*Cornell University*)

Papers: Wearables Devices

Paper389: Next Steps for Epidermal Computing: Opportunities and Challenges for Soft On-Skin Devices

Aditya Shekhar Nittala (*Saarland Informatics Campus, University of Calgary*)
Jürgen Steimle (*Saarland University, Saarland Informatics Campus*)

Paper390: Meander Coil++: A Body-scale Wireless Power Transmission Using Safe-to-body and Energy-efficient Transmitter Coil

Ryo Takahashi (*The University of Tokyo*)
Wakako Yukita (*The University of Tokyo*)

Tomoyuki Yokota (*The University of Tokyo*)
Takao Someya (*The University of Tokyo*)
Yoshihiro Kawahara (*The University of Tokyo*)

Paper391: KnitSkin: Machine-Knitted Scaled Skin for Locomotion

Jin Hee (Heather) Kim (*Cornell University*)
Shreyas Patil (*Cornell University*)
Sarina Matson (*Cornell University*)
Melissa Conroy (*Cornell University*)
Cindy Hsin-Liu Kao (*Cornell University*)

Paper392: ARGONAUT: An Inclusive Design Process for Wearable Health Monitoring Systems

Gabriella Schauss (*University of Colorado Boulder*)
Katya Arquilla (*Massachusetts Institute of Technology*)
Allison Anderson (*University of Colorado - Boulder*)

Paper393: HydroMod : Constructive Modules for Prototyping Hydraulic Physical Interfaces

Takafumi Morita (*The University of Tokyo*)
Yu Kuwajima (*Shibaura institute technologies*)
Ayato Minaminosono (*Shibaura Institution of Technology*)
Shingo Maeda (*Shibaura Institute of Technology*)
Yasuaki Kakehi (*The University of Tokyo*)

Papers: Gender and Communities

Paper394: “So Close, yet so Far”: Exploring Sexual-Minority Women’s Relationship Building via Online Dating in China

Yichao Cui (*Cornell Tech*)
Naomi Yamashita (*Kyoto University*)
Mingjie Liu (*The University of Texas at Austin*)
YI-CHIEH LEE (*National Yang Ming Chiao Tung University*)

Paper395: Nice Guys, Virgins, and Incels: Gender in Remixing and Sharing Memes at Hackathons

Sian Brooke (*LSE, University of Oxford*)

Paper396: Who am I, and who are you, and who are we? A Scientometric Analysis of Gender and Geography in HCI

Dana McKay (*MIT University*)
Huiwen Zhang (*University of Melbourne*)
George Buchanan (*University of Melbourne*)

Paper397: “Brush it Off”: How Women Workers Manage and Cope with Bias and Harassment in Gender-agnostic Gig Platforms

Ning F. Ma (*University of British Columbia*)
Veronica Rivera (*University of California, Santa Cruz*)
Zheng Yao (*Carnegie Mellon University*)
Dongwook Yoon (*University of British Columbia*)

Paper398: Pretty Princess vs. Successful Leader: Gender Roles in Greeting Card Messages

Jiao Sun (*University of Southern California*)
Tongshuang Wu (*University of Washington*)
Yue Jiang (*Max Planck Institute for Informatics*)
Ronil Awalegaonkar (*Latin School of Chicago*)
Xi Victoria Lin (*Facebook Inc.*)
Diyi Yang (*Georgia Institute of Technology*)

Papers: Touch and tangibility

Paper399: Smooth as Steel Wool: Effects of Visual Stimuli on the Haptic Perception of Roughness in Virtual Reality

Sebastian Günther (*Technical University of Darmstadt*)

Julian Rasch (*LMU Munich, Technical University of Darmstadt*)
Dominik Schön (*Technical University of Darmstadt*)
Florian Müller (*LMU Munich, Technical University of Darmstadt*)
Martin Schmitz (*Technical University of Darmstadt*)
Jan Riemann (*Technical University of Darmstadt*)
Andrii Matviienko (*Technical University of Darmstadt*)
Max Mühlhäuser (*Technical University of Darmstadt*)

Paper400: “Your Eyes Say You Have Used This Password Before”: Identifying Password Reuse from Gaze Behavior and Keystroke Dynamics

Yasmeen Abdrabou (*Bundeswehr University Munich, University of Glasgow*)
Johannes Schütte (*Bundeswehr University Munich*)
Ahmed Shams (*German University in Cairo*)
Ken Pfeuffer (*Aarhus University, Bundeswehr University Munich*)
Daniel Buschek (*University of Bayreuth*)
Mohamed Khamis (*University of Glasgow*)
Florian Alt (*Bundeswehr University Munich*)

Paper401: Can’t Touch This: Rethinking Public Technology in a COVID-19 Era

Jennifer Pearson (*Swansea University*)
Gavin Bailey (*Swansea University*)
Simon Robinson (*Swansea University*)
Matt Jones (*Swansea University*)
Tom Owen (*Swansea University*)
Chi Zhang (*Swansea University*)
Thomas Reitmaier (*Swansea University*)
Cameron Steer (*Swansea University*)
Anna Carter (*Swansea University*)
Deepak Sahoo (*Swansea University*)
Dani Kalarikalayil Raju (*Studio Hasi*)

Paper402: Mold-It: Understanding how Physical Shapes affect Interaction with Handheld Freeform Devices

Marcos Serrano (*IRIT - Elipse*)
Jolee Finch (*University of Bristol*)
Pourang Irani (*University of Manitoba*)
Andrés Lucero (*Aalto University*)
Anne Roudaut (*University of Bristol*)

Paper403: Affective State Prediction from Smartphone Touch and Sensor Data in the Wild

Rafael Wampfler (*ETH Zurich*)
Severin Klingler (*ETH Zurich*)
Barbara Solenthaler (*ETH Zurich*)
Victor Schinazi (*Bond University, Singapore-ETH Centre*)
Markus Gross (*ETH Zurich*)
Christian Holz (*ETH Zürich*)

Papers: Phone, Homes, and Privacy

Paper404: “It would probably turn into a social faux-pas”: Users’ and Bystanders’ Preferences of Privacy Awareness Mechanisms in Smart Homes

Parth Kirankumar Thakkar (*University of Maryland, Baltimore County*)
Shijing He (*Cisco Inc.*)
Shiyu Xu (*University of Michigan*)
Danny Yuxing Huang (*New York University*)
Yaxing Yao (*University of Maryland, Baltimore County*)

Paper405: Privacy Design Strategies for Home Energy Management Systems (HEMS)

Kopo M. Ramokapane (*University of Bristol*)

Caroline Bird (*University of Bristol*)
Awais Rashid (*University of Bristol*)
Ruzanna Chitchyan (*University of Bristol*)

Paper406: Permission vs. App Limiters: Profiling Smartphone Users to Understand Differing Strategies for Mobile Privacy Management

Ashwaq Alsoubai (*University of Central Florida*)
Reza Ghaiummy Anaraky (*Clemson University*)
Yao Li (*University of Central Florida*)
Xinru Page (*Brigham Young University*)
Bart Knijnenburg (*Clemson University*)
Pamela Wisniewski (*University of Central Florida*)

Paper407: Users' Expectations About and Use of Smartphone Privacy and Security Settings

Alisa Frik (*International Computer Science Institute, University of California*)
Juliann Kim (*University of California*)
Joshua Rafael Sanchez (*University of California*)
Joanne Ma (*University of California*)

Papers: Computation & Recommendation with Visualization

Paper408: Neo: Generalizing Confusion Matrix Visualization to Hierarchical and Multi-Output Labels

Jochen Görtler (*University of Konstanz*)
Fred Hohman (*Apple*)
Dominik Moritz (*Apple*)
Kanit Wongsuphasawat (*Apple*)
Donghao Ren (*Apple*)
Rahul Nair (*Apple*)
Marc Kirchner (*Apple*)
Kayur Patel (*Apple*)

Paper409: Structure-aware Visualization Retrieval

Haotian Li (*The Hong Kong University of Science and Technology, Singapore Management University*)
Yong Wang (*Singapore Management University*)
Aoyu Wu (*Hong Kong University of Science and Technology*)
Huan Wei (*The Hong Kong University of Science and Technology*)
Huamin Qu (*The Hong Kong University of Science and Technology*)

Paper410: ComputableViz: Mathematical Operators as a Formalism for Visualization Processing and Analysis

Aoyu Wu (*Hong Kong University of Science and Technology*)
Wai Tong (*The Hong Kong University of Science and Technology*)
Haotian Li (*The Hong Kong University of Science and Technology*)
Dominik Moritz (*Carnegie Mellon University, Apple*)
Yong Wang (*Singapore Management University*)
Huamin Qu (*The Hong Kong University of Science and Technology*)

Paper411: Recommendations for Visualization Recommendations: Exploring Preferences and Priorities in Visualization Recommendations for Public Health

Calvin Bao (*University of Maryland*)
Siyao Li (*University of Maryland*)
Sarah Flores (*University of Maryland*)
Michael Correll (*Tableau Software*)
Leilani Battle (*University of Washington*)

Paper412: VisGuide: User-Oriented Recommendations for Data Event Extraction

Yu-Rong Cao (*National Yang Ming Chiao Tung University*)
Xiao Han Li (*Multimedia Engineering*)
Jia-Yu Pan (*Google*)

Wen-Chieh Lin (*National Yang Ming Chiao Tung University*)

Papers: Mobility

Paper413: Visualizing Urban Accessibility: Investigating Multi-Stakeholder Perspectives through a Map-based Design Probe Study

Manaswi Saha (*University of Washington*)
Siddhant Patil (*University of Washington*)
Emily Cho (*University of Washington*)
Evie Cheng (*University of Washington*)
Chris Horng (*University of Washington*)
Devanshi Chauhan (*University of Washington*)
Rachel Kangas (*University of Washington*)
Richard McGovern (*University of Washington*)
Anthony Li (*University of Maryland*)
Jeffrey Heer (*University of Washington*)
Jon Froehlich (*University of Washington*)

Paper414: The Role of Staff in Facilitating Immersive Virtual Reality for Enrichment in Aged Care: An Ethic of Care Perspective

Jenny Waycott (*The University of Melbourne*)
Ryan Kelly (*University of Melbourne*)
Steven Baker (*Griffith University*)
Barbara Barbosa Neves (*Monash University*)
Kong Saoane Thach (*The University of Melbourne, Tra Vinh University*)
Reeva Lederman (*The University of Melbourne*)

Paper415: 3D Printed Street Crossings: Supporting Orientation and Mobility Training with People who are Blind or have Low Vision

Leona Holloway (*Monash University*)
Matthew Butler (*Monash University*)
Kim Marriott (*Monash University*)

Paper416: MyMove: Facilitating Older Adults to Collect In-Situ Activity Labels on a Smartwatch with Speech

Young-Ho Kim (*University of Maryland*)
Diana Chou (*University of Maryland*)
Bongshin Lee (*Microsoft Research*)
Margaret Danilovich (*CJE SeniorLife*)
Amanda Lazar (*University of Maryland*)
David Conroy (*The Pennsylvania State University*)
Hernisa Kacorri (*University of Maryland*)
Eun Kyoung Choe (*University of Maryland*)

Papers: Agents

Paper417: "I See You!": A Design Framework for Interface Cues about Agent Visual Perception from a Thematic Analysis of Video Games

Matthew Rueben (*New Mexico State University*)
Matthew Horrocks (*New Mexico State University*)
Jennifer Eleanor Martinez (*Embry-Riddle Aeronautical University*)
Michelle Cormier (*New Mexico State University*)
Nicolas LaLone (*University of Nebraska at Omaha*)
Marlena Fraune (*New Mexico State University*)
Phoebe O. Touns Dugas (*New Mexico State University*)

Paper418: Personalization Trade-offs in Designing Dialogue-based Interactive Information System for Support-Seeking of Sexual Violence Survivors

Hyeok Kim (*Northwestern University*)

Youjin Hwang (*Seoul National University*)
Jieun Lee (*Seoul National University*)
Youngjin Kwon (*Seoul National University*)
Yujin Park (*Seoul National University*)
Joonhwan Lee (*Seoul National University*)

Paper419: Letters from the Future: Exploring Ethical Dilemmas in the Design of Social Agents

Michal Luria (*Carnegie Mellon University*)
Stuart Candy (*University of Southern California*)

Paper420: Designing Human-Agent Collaborations: Commitment, responsiveness, and support

Nazli Cila (*Delft University of Technology*)

Papers: Virtual Agents and Environments

Paper421: Proxemics for Human-Agent Interaction in Augmented Reality

Ann Huang (*LMU Munich*)
Pascal Knierim (*LMU Munich*)
Francesco Chiossi (*LMU Munich*)
Lewis Chuang (*TU Chemnitz*)
Robin Welsch (*LMU Munich*)

Paper422: Simulating Human Imprecision in Temporal Statements of Intelligent Virtual Agents

Susanne Schmidt (*Universität Hamburg*)
Sven Zimmermann (*Universität Hamburg*)
Celeste Mason (*University of Hamburg*)
Frank Steinicke (*Universität Hamburg*)

Paper423: Digital Proxemics: Designing Social and Collaborative Interaction in Virtual Environments

Julie Williamson (*University of Glasgow*)
Joseph O'Hagan (*University of Glasgow*)
John Alexis Guerra-Gomez (*Northeastern University*)
John Williamson (*University of Glasgow*)
Pablo Cesar (*Centrum Wiskunde & Informatica (CWI)*)
David Shamma (*Toyota Research Institute*)

Paper424: A New Uncanny Valley? The Effects of Speech Fidelity and Human Listener Gender on Social Perceptions of a Virtual-Human Speaker

Tiffany Do (*University of Central Florida*)
Ryan P. McMahan (*University of Central Florida*)
Pamela Wisniewski (*University of Central Florida*)

Paper425: Understanding and Designing Avatar Biosignal Visualizations for Social Virtual Reality Entertainment

Sueyoon Lee (*Centrum Wiskunde & Informatica (CWI), Delft University of Technology*)
Abdallah El Ali (*Centrum Wiskunde & Informatica (CWI)*)
Maarten Wijntjes (*Delft University of Technology*)
Pablo Cesar (*Centrum Wiskunde & Informatica (CWI), Delft University of Technology (TU Delft)*)

Papers: Hands & Fingers

Paper426: Interaction with Touch-Sensitive Knitted Fabrics: User Perceptions and Everyday Use Experiments

Denisa McDonald (*Drexel University*)
Shruti Mahajan (*Worcester Polytechnic Institute*)
Richard Vallett (*Drexel University*)
Genevieve Dion (*Westphal College of Media Arts & Design*)
Ali Shokoufandeh (*College of Computing and Informatics*)

Erin Solovey (*Worcester Polytechnic Institute*)

Paper427: Eyes-Off Your fingers: Gradual Surface Haptic Feedback Improves Eyes-Free Touchscreen Interaction.

Corentin Bernard (*Aix Marseille Univ, CNRS, PRISM, Stellantis*)

Jocelyn Monnoyer (*CNRS / Aix-Marseille University, Stellantis*)

Sølvi Ystad (*Aix Marseille Univ, CNRS, PRISM*)

Michael Wiertlewski (*TU Delft*)

Paper428: It's Touching: Understanding Touch-Affect Association in Shape-Change with Kinematic Features

Feng Feng (*University of Bristol*)

Dan Bennett (*University of Bristol*)

Zhijun Fan (*Shandong university*)

Oussama Metatla (*University of Bristol*)

Paper429: Hand Interfaces: Using Hands to Imitate Objects in AR/VR for Expressive Interactions

Siyu Pei (*University of California, Los Angeles*)

Alexander Chen (*University of California, Los Angeles*)

Jaewook Lee (*University of Illinois at Urbana-Champaign*)

Yang Zhang (*University of California, Los Angeles*)

Paper430: FingerX: Rendering Haptic Shape of Virtual Objects Augmented from Real Objects using Extendable and Withdrawable Supports on Fingers

Hsin-Ruey Tsai (*National Chengchi University*)

Chieh Tsai (*National Chengchi University*)

Yu-So Liao (*National Chengchi University*)

Yi-Ting Chiang (*National Chengchi University*)

Zhong-Yi Zhang (*National Chengchi University*)

Papers: Multimodality

Paper431: Haptic Fidelity Framework: Defining the Factors of Realistic Haptic Feedback for Virtual Reality

Thomas Muender (*University of Bremen*)

Michael Bonfert (*University of Bremen*)

Anke Reinschluessel (*University of Bremen*)

Rainer Malaka (*University of Bremen*)

Tanja Döring (*University of Bremen*)

Paper432: Aware: Intuitive Device Activation Using Prosody for Natural Voice Interactions

Xinlei Zhang (*The University of Tokyo*)

Zixiong Su (*The University of Tokyo*)

Jun Rekimoto (*The University of Tokyo, Sony CSL Kyoto*)

Paper433: SpinOcchio: Understanding Haptic-Visual Congruency of Skin-Slip in VR with a Dynamic Grip Controller

Myung Jin Kim (*KAIST*)

Neung Ryu (*KAIST*)

Wooje Chang (*KAIST*)

Michel Pahud (*Microsoft Research*)

Mike Sinclair (*Microsoft*)

Andrea Bianchi (*KAIST*)

Paper434: Reducing the Cognitive Load of Playing a Digital Tabletop Game with a Multimodal Interface

Chris Zimmerer (*University of Würzburg, Department of Computer Science, HCI Group, University of Würzburg, Department of Computer Science, HCI Group*)

Philipp Krop (*Würzburg University, Würzburg University*)

Martin Fischbach (*University of Würzburg, University of Würzburg*)

Marc Erich Latoschik (*Department of Computer Science, HCI Group, Department of Computer Science, HCI Group*)

Paper435: Vibration-Augmented Buttons: Information Transmission Capacity and Application to Interaction Design

Chaeyong Park (*Pohang University of Science and Technology*)
Jeongwoo Kim (*Pohang University of Science and Technology*)
Dong-Geun Kim (*Pohang University of Science and Technology*)
Seungjae Oh (*Pohang University of Science and Technology (POSTECH)*)
Seungmoon Choi (*Pohang University of Science and Technology (POSTECH)*)

Papers: VR and Agents for Health

Paper436: A Virtual Counselor for Breast Cancer Genetic Counseling: Adaptive Pedagogy Leads to Greater Knowledge Gain

Shuo Zhou (*Northeastern University*)
Timothy Bickmore (*Northeastern University*)

Paper437: Investigating Culturally Responsive Design for Menstrual Tracking and Sharing Practices Among Individuals with Minimal Sexual Education

Georgianna Lin (*Georgia Institute of Technology, Georgia Institute of Technology*)
Elizabeth Mynatt (*Georgia Institute of Technology, Georgia Institute of Technology*)
Neha Kumar (*Georgia Tech, Georgia Tech*)

Paper438: Virtual Feed: Design and Evaluation of a Virtual Reality Simulation Addressing the Lived Experience of Breastfeeding

Kymeng Tang (*KU Leuven*)
Kathrin Gerling (*KU Leuven*)
Luc Geurts (*KU Leuven*)

Paper439: Designing Chatbots with Black Americans with Chronic Conditions: Overcoming Challenges against COVID-19

Junhan Kim (*University of Michigan*)
Jana Muhic (*University of Michigan*)
Lionel Robert (*University of Michigan*)
Sun Young Park (*University of Michigan*)

Paper440: Examining AI Methods for Micro-Coaching Dialogs

Elliot Mitchell (*Columbia University*)
Noemie Elhadad (*Columbia University*)
Lena Mamykina (*Columbia University*)

Papers: Caring for Mental Health and Well-being

Paper441: What are you thinking?: Using CBT and Storytelling to Improve Mental Health Among College Students

Aleesha Hamid (*Lahore University of Management Sciences*)
Rabiah Arshad (*Lahore University of Management Sciences*)
Suleman Shahid (*Lahore University of Management Sciences*)

Paper442: TypeOut: Leveraging Just-in-Time Self-Affirmation for Smartphone Overuse Reduction

Xuhai Xu (*University of Washington*)
Tianyuan Zou (*Tsinghua University*)
Han Xiao (*Beijing University of Posts and Telecommunications*)
Yanzhang Li (*Tsinghua University*)
Ruolin Wang (*UCLA*)
Tianyi Yuan (*Department of Industrial Engineering*)
Yuntao Wang (*Tsinghua University*)
Yuanchun Shi (*Tsinghua University*)
Jennifer Mankoff (*University of Washington*)
Anind Dey (*University of Washington*)

Paper443: Perspectives on Integrating Trusted Other Feedback in Therapy for Veterans with PTSD

Hayley Evans (*Georgia Institute of Technology*)

Catherine Deeter (*Georgia Institute of Technology*)
Jiawei Zhou (*Georgia Institute of Technology*)
Kimberly Do (*Georgia Institute of Technology*)
Andrew Sherrill (*Emory University School of Medicine*)
Rosa Arriaga (*Georgia Institute of Technology*)

Paper444: Digital Emotion Regulation in Everyday Life

Wally Smith (*The University of Melbourne*)
Greg Wadley (*The University of Melbourne*)
Sarah Webber (*University of Melbourne*)
Benjamin Tag (*University of Melbourne*)
Vassilis Kostakos (*University of Melbourne*)
Peter Koval (*The University of Melbourne*)
James J. Gross (*Stanford University*)

Paper445: “Guilty of Talking Too Much”: How Psychotherapists Gamify Therapy

Elina Tochilnikova (*Northeastern University*)
Amrit Patnaik (*Northeastern University*)
Ghada Alsebayel (*Northeastern University*)
Uttkarsh Narayan (*Northeastern University*)
Andrew Coeytaux (*Northeastern University*)
Valeria Ramdin (*Northeastern University*)
Miso Kim (*Northeastern University*)
Casper Hartevelde (*Northeastern University*)

Papers: The Privacy of Everyday Smart Things

Paper446: Exploring Bystanders’ Privacy Concerns with Smart Homes in Jordan

Wael Albayaydh (*University of Oxford*)
Ivan Flechais (*University of Oxford*)

Paper447: Hey Alexa, Who Am I Talking to?: Analyzing Users’ Perception and Awareness Regarding Third-party Alexa Skills

Aafaq Sabir (*North Carolina State University*)
Evan Lafontaine (*North Carolina State University*)
Anupam Das (*North Carolina State University*)

Paper448: Users Can Deduce Sensitive Locations Protected by Privacy Zones on Fitness Tracking Apps

Jaron Mink (*University of Illinois at Urbana-Champaign*)
Amanda Rose Yuile (*University of Illinois at Urbana-Champaign*)
Uma Pal (*University of Massachusetts Amherst*)
Adam Aviv (*The George Washington University*)
Adam Bates (*University of Illinois at Urbana-Champaign*)

Paper449: Exploring the Needs of Users for Supporting Privacy-protective Behavior in Smart Homes

Haojian Jin (*CMU*)
Boyuan Guo (*CMU*)
Rituparna Roychoudhury (*Carnegie Mellon University*)
Yaxing Yao (*University of Maryland Baltimore County*)
Swarun Kumar (*Carnegie Mellon University*)
Yuvraj Agarwal (*Carnegie Mellon University*)
Jason I. Hong (*Carnegie Mellon University*)

Papers: Speculative Design & Design Fictions

Paper450: “All that You Touch, You Change”: Expanding the Canon of Speculative Design Towards Black Futuring

Christina Harrington (*Carnegie Mellon University*)

Shamika Klassen (*The University of Colorado at Boulder*)
Yolanda Rankin (*FLORIDA STATE UNIVERSITY*)

Paper451: Seamless Visions, Seamful Realities: Anticipating Rural Infrastructural Fragility in Early Design of Digital Agriculture

Gloire Rubambiza (*Cornell University*)
Phoebe Sengers (*Cornell University*)
Hakim Weatherspoon (*Cornell University*)

Paper452: Radical Futures: Supporting Community-Led Design Engagements through an Afrofuturist Speculative Design Toolkit

Kirsten Bray (*Georgia Tech*)
Christina Harrington (*Carnegie Mellon University*)
Andrea Parker (*Georgia Tech*)
N'Deye Diakhate (*Black Womxn Flourish*)
Jennifer Roberts (*Versed Education Group*)

Paper453: Interactive Fiction Prototypes for Coping with Interpersonal Racism

Alexandra To (*Northeastern University*)
Hillary Carey (*Carnegie Mellon University*)
Riya Shrivastava (*Carnegie Mellon University*)
Jessica Hammer (*Carnegie Mellon University*)
Geoff Kaufman (*Carnegie Mellon University*)

Papers: Design for Wellbeing and Resilience

Paper454: ReClaym our Compost: Biodegradable Clay for Intimate Making

Fiona Bell (*University of Colorado*)
Netta Ofer (*University of Colorado, Boulder*)
Mirela Alistar (*University of Colorado Boulder*)

Paper455: Sensitive Pictures: Emotional Interpretation in the Museum

Steve Benford (*University of Nottingham*)
Anders Løvlie (*IT University of Copenhagen*)
Karin Ryding (*IT University*)
Paulina Rajkowska (*Uppsala University*)
Edgar Bodiaj (*University of Nottingham*)
Dimitrios Darzentas (*University of Nottingham*)
Harriet Cameron (*University of Nottingham*)
Jocelyn Spence (*University of Nottingham*)
Joy Egede (*University of Nottingham*)
Bogdan Spanjevic (*NextGame*)

Paper456: Understanding Screen-based Dining Practices through the Lens of Mindful Eating

Rohit Ashok Khot (*RMIT University*)
Deepti Aggarwal (*RMIT University*)
Nandini Pasumarthy (*RMIT University*)

Paper457: A Study of Solar Cooking: Exploring Climate-Resilient Food Preparation and Opportunities for HCI

Stacey Kuznetsov (*Arizona State University*)
Alejandra Rodriguez Vega (*Arizona State University*)
Elenore Long (*Arizona State University*)

Paper458: Yo-Yo Machines: Self-Build Devices that Support Emotional Connections During the Pandemic

William Gaver (*Northumbria University*)
Andy Boucher (*Northumbria University*)
Dean Brown (*Northumbria University*)
David Chatting (*Goldsmiths, University of London*)
Naho Matsuda (*Northumbria University*)
Liliana Ovalle (*Northumbria University*)

Andy Sheen (*Northumbria University*)
Michail Vanis (*Northumbria University*)

Papers: Captioning Images, Videos and Applications

Paper459: Watch It, Don't Imagine It: Creating a Better Caption-Occlusion Metric by Collecting More Ecologically Valid Judgments from DHH Viewers

Akhter Al Amin (*Rochester Institute of Technology*)
Saad Hassan (*Rochester Institute of Technology*)
Sooyeon Lee (*Rochester Institute of Technology*)
Matt Huenerfauth (*Rochester Institute of Technology*)

Paper460: Remotely Co-Designing Features for Communication Applications using Automatic Captioning with Deaf and Hearing Pairs

Matthew Seita (*Rochester Institute of Technology*)
Sooyeon Lee (*Rochester Institute of Technology*)
Sarah Andrew (*Rochester Institute of Technology*)
Kristen Shinohara (*Rochester Institute of Technology*)
Matt Huenerfauth (*Rochester Institute of Technology*)

Paper461: A Large-Scale Longitudinal Analysis of Missing Label Accessibility Failures in Android Apps

Raymond Fok (*University of Washington*)
Mingyuan Zhong (*University of Washington*)
Anne Ross (*Bucknell University*)
James Fogarty (*University of Washington*)
Jacob Wobbrock (*University of Washington*)

Paper462: ImageExplorer: Multi-Layered Touch Exploration to Encourage Skepticism Towards Imperfect AI-Generated Image Captions

Jaewook Lee (*University of Illinois at Urbana-Champaign*)
Jaylin Herskovitz (*University of Michigan*)
Yi-Hao Peng (*Carnegie Mellon University*)
Anhong Guo (*University of Michigan*)

Papers: UX Methodology

Paper463: Above and Beyond: A Scoping Review of Domains and Applications for Human-Drone Interaction

Viviane Herdel (*Ben-Gurion University of the Negev*)
Lee Yamin (*Ben-Gurion University of the Negev*)
Jessica Cauchard (*Ben Gurion University of the Negev*)

Paper464: Understanding Social Influence in Collective Product Ratings Using Behavioral and Cognitive Metrics

Fu-Yin Cherng (*National Chung Cheng University*)
Jingchao Fang (*UC Davis*)
Yinhao Jiang (*University of California, Davis*)
Xin Chen (*University of California, Davis*)
Taejun Choi (*Looxid Labs US Inc.*)
Hao-Chuan Wang (*UC Davis*)

Paper465: Mobilizing Crowdwork: A Systematic Assessment of the Mobile Usability of HITs

Senjuti Dutta (*University of Tennessee, Knoxville*)
Rhema Linder (*University of Tennessee, Knoxville*)
Doug Lowe (*University of Tennessee, Knoxville*)
Richard Rosenbalm (*University of Tennessee, Knoxville*)
Anastasia Kuzminykh (*University of Toronto*)
Alex Williams (*University of Tennessee, Knoxville*)

Paper466: Psychometric Properties of the User Experience Questionnaire (UEQ)
Andrea Schankin (*FOM University Applied Sciences, Karlsruhe Institute of Technology*)
Matthias Budde (*Disy Informationssysteme GmbH, Karlsruhe Institute of Technology (KIT)*)
Till Riedel (*Karlsruhe Institute of Technology*)
Michael Beigl (*KIT / TECO*)

Paper467: Identifying an Aurally Distinct Phrase Set for Text Entry Techniques
Jacob Abbott (*Indiana University Bloomington*)
Jofish Kaye (*Mozilla*)
James Clawson (*Indiana University Bloomington*)

Papers: Emotions & Morality in Games

Paper468: (Don't) stand by me: How trait psychopathy and NPC emotion influence player perceptions, verbal responses, and movement behaviours in a gaming task
Martin Dechant (*University of Saskatchewan*)
Robin Welsch (*LMU Munich*)
Julian Frommel (*University of Saskatchewan*)
Regan Mandryk (*University of Saskatchewan*)

Paper469: "I Don't Want To Shoot The Android": Players Translate Real-Life Moral Intuitions to In-Game Decisions in Detroit: Become Human
Karina Arrambide (*University of Waterloo, University of Waterloo*)
John Yoon (*University of Waterloo, University of Waterloo*)
Cayley MacArthur (*University of Waterloo, University of Waterloo*)
Katja Rogers (*University of Waterloo, University of Waterloo*)
Alessandra Luz (*University of Waterloo, University of Waterloo*)
Lennart Nacke (*University of Waterloo, University of Waterloo*)

Paper470: Emotional Exploration and the Eudaimonic Gameplay Experience: A Grounded Theory
Tom Cole (*Goldsmiths, University of London*)
Marco Gillies (*Goldsmiths, University of London*)

Paper471: Do People Use Games to Compensate for Psychological Needs During Crises? A Mixed-Methods Study of Gaming During COVID-19 Lockdowns
Nick Ballou (*Queen Mary University of London*)
Sebastian Deterding (*University of York*)
Ioanna Iacovides (*University of York*)
Laura Helsby (*University of York*)

Papers: Nudging, Recommending, Notifying

Paper472: Designing for Noticeability: The Impact of Visual Importance on Desktop Notifications
Philipp Müller (*DFKI GmbH*)
Sander Staal (*Institute for Visualisation and Interactive Systems*)
Mihai Băce (*University of Stuttgart*)
Andreas Bulling (*University of Stuttgart*)

Paper473: Situational Recommender: Are You On the Spot, Refining Plans, or Just Bored?
Sruthi Viswanathan (*NAVER LABS Europe*)
Cecile Boulard (*NAVER LABS Europe*)
Adrien Bruyat (*NAVER LABS Europe*)
Antonietta Grasso (*NAVER LABS Europe*)

Paper474: Understanding Perceptions of AI-Mediated Email Writing]Will AI Console Me when I Lose my Pet? Understanding Perceptions of AI-Mediated Email Writing

Yihe Liu (*Georgia Institute of Technology*)
Anushk Mittal (*Georgia Tech*)
Diyi Yang (*Georgia Institute of Technology*)
Amy Bruckman (*Georgia Institute of Technology*)

Paper475: Nudging Behavior Change: Using In-Group and Out-Group Social Comparisons to Encourage Healthier Choices

Blake DiCosola (*University of Oxford, University of California (Irvine)*)
Gina Neff (*University of Cambridge, University of Oxford*)

Papers: Accessibility and Data Visualization

Paper476: Supporting Accessible Data Visualization Through Audio Data Narratives

Alexa Siu (*Stanford University, Adobe Research*)
Gene Kim (*Stanford University*)
Sile O'Modhrain (*University of Michigan*)
Sean Follmer (*Stanford University*)

Paper477: Slide-Tone and Tilt-Tone: 1-DOF Haptic Techniques for Conveying Shape Characteristics of Graphs to Blind Users

Danyang Fan (*Stanford University*)
Alexa Siu (*Stanford University*)
Wing-Sum Law (*Stanford University*)
Raymond Zhen (*Stanford University*)
Sile O'Modhrain (*University of Michigan*)
Sean Follmer (*Stanford University*)

Paper478: VoxLens: Making Online Data Visualizations Accessible with an Interactive JavaScript Plug-In

Ather Sharif (*University of Washington*)
Olivia Wang (*University of Washington*)
Alida Muongchan (*University of Washington*)
Katharina Reinecke (*University of Washington*)
Jacob Wobbrock (*University of Washington*)

Paper479: Improving Colour Patterns to Assist People with Colour Vision Deficiency

Connor Geddes (*University of Guelph*)
David Flatla (*University of Guelph*)
Garreth Tigwell (*Rochester Institute of Technology*)
Roshan Peiris (*Rochester Institute of Technology*)

Paper480: Infsonics: Accessible Infographics for People who are Blind using Sonification and Voice

Leona Holloway (*Monash University*)
Cagatay Goncu (*Monash University*)
Alon IIsar (*Monash University*)
Matthew Butler (*Monash University*)
Kim Marriott (*Monash University*)

Papers: Design Practice

Paper481: Solving Separation-of-Concerns Problems in Collaborative Design of Human-AI Systems through Leaky Abstractions

Hariharan Subramonyam (*Stanford University*)
Jane Im (*University of Michigan*)
Colleen Seifert (*U Michigan*)
Eytan Adar (*University of Michigan*)

Paper482: CO/DA: Live-Coding Movement-Sound Interactions for Dance Improvisation

Jules Françoise (*Université Paris-Saclay, CNRS*)
Sarah Fdili Alaoui (*Université Paris Saclay*)

Yves Candau (*Simon Fraser University*)

Paper483: How Experienced Designers of Enterprise Applications Engage AI as a Design Material

Nur Yildirim (*Carnegie Mellon University*)
Alex Kass (*Accenture*)
Teresa Tung (*Accenture Labs*)
Connor Upton (*Fjord at the Dock*)
Donnacha Costello (*Fjord at the Dock*)
Robert Giusti (*Fjord*)
Sinem Lacin (*Fjord at the Dock*)
Sara Lovic (*Fjord at the Dock*)
James O'Neill (*Fjord*)
Rudi O'Reilly Meehan (*Fjord at the Dock*)
Eoin Ó Loideáin (*Fjord*)
Azzurra Pini (*Accenture The Dock*)
Medb Corcoran (*Accenture The Dock*)
Jeremiah Hayes (*Accenture The Dock*)
Diarmuid Cahalane (*Accenture Labs*)
Gaurav Shivhare (*Fjord at the Dock*)
Luigi Castoro (*Accenture*)
Giovanni Caruso (*Accenture*)
Changhoon Oh (*Boston College*)
James McCann (*Carnegie Mellon University*)
Jodi Forlizzi (*Carnegie Mellon University*)
John Zimmerman (*Carnegie Mellon University*)

Paper484: Six Facets of Facilitation: Participatory Design Facilitators' Perspectives on Their Role and Its Realization

Yngve Dahl (*NTNU*)
Kshitij Sharma (*NTNU*)

Paper485: Critical-Playful Speculations with Cameras in the Home

Neilly Tan (*University of Washington*)
Brian Kinnee (*University of Washington*)
Dana Langseth (*University of Washington*)
Sean Munson (*University of Washington*)
Audrey Desjardins (*University of Washington*)

Papers: Trust, Recommendation, and Explainable AI (XAI)

Paper486: User Trust in Recommendation Systems: A comparison of Content-Based, Collaborative and Demographic Filtering

Mengqi Liao (*The Pennsylvania State University*)
S. Shyam Sundar (*The Pennsylvania State University*)
Joseph Walther (*University of California, Santa Barbara*)

Paper487: Improving understandability of feature contributions in model-agnostic explainable AI tools

Sophia Hadash (*Jheronimus Academy of Data Science, Eindhoven University of Technology*)
Martijn Willemsen (*Jheronimus Academy of Data Science, Eindhoven University of Technology*)
Chris Snijders (*Technical university of Eindhoven*)
Wijnand IJsselsteijn (*Technical university of Eindhoven*)

Paper488: How to Guide Task-oriented Chatbot Users, and When: A Mixed-methods Study of Combinations of Chatbot Guidance Types and Timings

Su-Fang Yeh (*National Yang Ming Chiao Tung University*)
Meng-Hsin Wu (*University of Toronto*)
Tze-Yu Chen (*National Yang Ming Chiao Tung University*)
Yen-Chun Lin (*National Yang Ming Chiao Tung University*)
Xijing Chang (*National Yang Ming Chiao Tung University*)
You-Hsuan Chiang (*National Yang Ming Chiao Tung University*)

Yung-Ju Chang (*National Yang Ming Chiao Tung University*)

Paper489: Impacts of Personal Characteristics on User Trust in Conversational Recommender Systems

Wanling Cai (*Hong Kong Baptist University*)

Yucheng Jin (*Hong Kong Baptist University*)

Li Chen (*Hong Kong Baptist University*)

Papers: Authoring Data

Paper490: Tisane: Authoring Statistical Models via Formal Reasoning from Conceptual and Data Relationships

Eunice Jun (*University of Washington*)

Audrey Seo (*University of Washington*)

Jeffrey Heer (*University of Washington*)

Rene Just (*University of Washington*)

Paper491: Math Augmentation: How Authors Enhance the Readability of Formulas using Novel Visual Design Practices

Andrew Head (*Allen Institute for AI*)

Amber Xie (*UC Berkeley*)

Marti Hearst (*UC Berkeley*)

Paper492: Varv: Reprogrammable Interactive Software as a Declarative Data Structure

Marcel Borowski (*Aarhus University*)

Luke Murray (*MIT*)

Rolf Bagge (*Aarhus University*)

Janus Kristensen (*Aarhus University*)

Arvind Satyanarayan (*MIT*)

Clemens Klokrose (*Aarhus University*)

Paper493: VibEmoji: Exploring User-authoring Multi-modal Emoticons in Social Communication

Pengcheng An (*Southern University of Science and Technology, University of Waterloo*)

Ziqi Zhou (*University of Waterloo*)

Qing Liu (*University of Waterloo*)

Yifei Yin (*University of Toronto Scarborough*)

Linghao Du (*Huawei Canada*)

Da-Yuan Huang (*Huawei Canada*)

Jian Zhao (*University of Waterloo*)

Papers: Intelligent Interaction Techniques

Paper494: Select or Suggest? Reinforcement Learning-based Method for High-Accuracy Target Selection on Touchscreens

Zhi Li (*Stony Brook University*)

Maozheng Zhao (*Stony Brook University*)

Dibyendu Das (*Stony Brook University*)

HANG ZHAO (*Stony Brook University*)

Yan Ma (*Stony Brook University*)

Wanyu Liu (*IRCAM Centre Pompidou*)

Michel Beaudouin-Lafon (*Université Paris-Saclay, Université Paris-Saclay, CNRS, Inria*)

Fusheng Wang (*Stony Brook University*)

IV Ramakrishnan (*Stony Brook University*)

Xiaojun Bi (*Stony Brook University*)

Paper495: A Performance Evaluation of Nomon: A Flexible Interface for Noisy Single-Switch Users

Nicholas Bonaker (*Massachusetts Institute of Technology*)

Emlı-Mari Nel (*University of the Witwatersrand*)

Keith Vertanen (*Michigan Technological University*)

Tamara Broderick (*Massachusetts Institute of Technology*)

Paper496: Enabling Hand Gesture Customization on Wrist-Worn Devices

Xuhai Xu (*Apple Inc.*)
Jun Gong (*Apple Inc.*)
Carolina Brum (*Apple Inc.*)
Lilian Liang (*Apple Inc.*)
Bongsoo Suh (*Apple Inc.*)
Shivam Kumar Gupta (*Apple Inc.*)
Yash Agarwal (*Apple Inc.*)
Laurence Lindsey (*Apple Inc.*)
Runchang Kang (*Apple Inc.*)
Behrooz Shahsavari (*Apple Inc.*)
Tu Nguyen (*Apple Inc.*)
Heriberto Nieto (*Apple Inc.*)
Scott Hudson (*Apple Inc., Carnegie Mellon University*)
Charlie Maalouf (*Apple Inc.*)
Jax Seyed Mousavi (*Apple Inc.*)
Gierad Laput (*Apple Inc.*)

Paper497: TapType: Ten-finger text entry on everyday surfaces via Bayesian inference

Paul Strelti (*ETH Zürich*)
Jiaxi Jiang (*ETH Zürich*)
Andreas Fender (*ETH Zürich*)
Manuel Meier (*ETH Zürich*)
Hugo Romat (*ETH Zürich*)
Christian Holz (*ETH Zürich*)

Paper498: Gesture Elicitation as a Computational Optimization Problem

Theophanis Tsandilas (*Université Paris-Saclay, CNRS, Inria, LISN*)
Pierre Dragicevic (*Université de Bordeaux, CNRS, Inria, LaBRI*)

Papers: Video Authoring

Paper499: Enhanced Videogame Livestreaming by Reconstructing an Interactive 3D Game View for Spectators

Jeremy Hartmann (*University of Waterloo, mtion interactive inc.*)
Daniel Vogel (*University of Waterloo*)

Paper500: CatchLive: Real-time Summarization of Live Streams with Stream Content and Interaction Data

Saelyne Yang (*School of Computing, KAIST*)
Jisu Yim (*KAIST*)
Juho Kim (*KAIST*)
Hijung Valentina Shin (*Adobe Research*)

Paper501: FitVid: Responsive and Flexible Video Content Adaptation

Jeongyeon Kim (*KAIST*)
Yubin Choi (*KAIST*)
Minsuk Kahng (*Oregon State University*)
Juho Kim (*KAIST*)

Paper502: Katika: An End-to-End System for Authoring Amateur Explainer Motion Graphics Videos

Amir Jahanlou (*Simon Fraser University*)
Parmit Chilana (*Simon Fraser University*)

Papers: Tangibles and Ambient Computing

Paper503: SABLIER : a Tangible Interactor to Navigate through Space and Time

Pierre Mahieux (*Lab-STICC, CNRS, ENIB*)
Romain Biannic (*Lab-STICC, CNRS, ENIB*)

Sébastien Kubicki (*Lab-STICC UMR 6285*)
Ronan Querrec (*ENIB*)

Paper504: Hidden Interfaces for Ambient Computing: Enabling Interaction in Everyday Materials through High-brightness Visuals on Low-cost Matrix Displays

Alex Olwal (*Google Inc.*)
Artem Dementyev (*Google Research*)

Paper505: Tangible Globes for Data Visualisation in Augmented Reality

Kadek Ananta Satriadi (*Monash University, University of South Australia*)
Jim Smiley (*Faculty of Information Technology*)
Barrett Ens (*Monash University*)
Maxime Cordeil (*Monash University*)
Tobias Czauderna (*Monash University*)
Benjamin Lee (*Monash University*)
Ying Yang (*Monash University*)
Tim Dwyer (*Monash University*)
Bernhard Jenny (*Monash University*)

Paper506: (Dis)Appearables: A Concept and Method for Actuated Tangible UIs to Appear and Disappear based on Stages

Ken Nakagaki (*MIT Media Lab*)
Jordan L Tappa (*Massachusetts Institute of Technology*)
Yi Zheng (*University of Southern California*)
Jack Forman (*Massachusetts Institute of Technology*)
Joanne Leong (*MIT*)
Sven Koenig (*University of Southern California*)
Hiroshi Ishii (*MIT*)

Paper507: Tangible Collaboration: A Human-Centered Approach for Sharing Control With an Actuated-Interface

Oren Zuckerman (*The Interdisciplinary Center (IDC) Herzliya*)
Viva Press (*The Interdisciplinary Center (IDC) Herzliya*)
Ehud Barda (*The Interdisciplinary Center (IDC) Herzliya*)
Benny Megidish (*The Interdisciplinary Center (IDC) Herzliya*)
Hadas Erel (*The Interdisciplinary Center (IDC) Herzliya*)

Papers: Supporting Virtual Work

Paper508: Making Space for Cultural Infrastructure: The Breakdown and Maintenance Work of Independent Movie Theaters During Crisis

Sam Ankenbauer (*University of Michigan*)
Alex Jiahong Lu (*University of Michigan*)

Paper509: “As Uploaders, We Have the Responsibility”: Individualized Professionalization of Bilibili Uploaders

Xianghua(Sharon) Ding (*University of Glasgow, Fudan University*)
Yubo Kou (*Pennsylvania State University*)
Yiwen Xu (*Fudan University*)
Peng Zhang (*Fudan University*)

Paper510: A Little Too Personal: Effects of Standardization versus Personalization on Job Acquisition, Work Completion, and Revenue for Online Freelancers

Jane Hsieh (*Carnegie Mellon University*)
Yili Hong (*University of Houston*)
Gordon Burtch (*Boston University*)
Haiyi Zhu (*Carnegie Mellon University*)

Paper511: FluidMeet: Enabling Frictionless Transitions Between In-Group, Between-Group, and Private Conversations During Virtual Breakout Meetings

Erzhen Hu (*University of Virginia*)

Md Aashikur Rahman Azim (*University of Virginia*)
Seongkook Heo (*University of Virginia*)

Papers: Supporting Dementia

Paper512: Pet-Robot or Appliance? Care Home Residents with Dementia Respond to a Zoomorphic Floor Washing Robot

Emanuela Marchetti (*SDU Syddansk Universitet*)
Sophie Grimme (*Bauhaus-Universität Weimar*)
Eva Hornecker (*Bauhaus-Universität Weimar*)
Avgi Kollakidou (*University of Southern Denmark*)
Philipp Graf (*Chemnitz Technical University*)

Paper513: Barriers to Online Dementia Information and Mitigation

Emma Dixon (*University of Maryland*)
Jesse Anderson (*University of Maryland*)
Diana Blackwelder (*University of Maryland*)
Mary Radnofsky (*University of Maryland*)
Amanda Lazar (*University of Maryland*)

Paper514: Designing for Everyday Sounds at Home with People with Dementia and their Partners

Maarten Houben (*Eindhoven University of Technology, Tilburg University*)
Rens Brankaert (*University of Technology Eindhoven, Fontys University of Applied Sciences*)
Gail Kenning (*University of New South Wales*)
Inge Bongers (*Tilburg University*)
Berry Eggen (*Eindhoven University of Technology*)

Paper515: LivingMoments: Bespoke Social Communication for People living with Dementia and their Relatives

Myrte Thoolen (*University of Technology Eindhoven*)
Francesca Toso (*Eindhoven University of Technology*)
Sebastiaan Peek (*Tranzo, School of Social and Behavioral Science, Tilburg University*)
Yuan Lu (*University of Technology Eindhoven*)
Rens Brankaert (*University of Technology Eindhoven, Fontys University of Applied Sciences*)

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Paper516: SkyPort: Investigating 3D Teleportation Methods in Virtual Environments

Andrii Matviienko (*Technical University of Darmstadt*)
Florian Müller (*TU Darmstadt*)
Martin Schmitz (*Technical University of Darmstadt*)
Marco Fendrich (*TU Darmstadt*)
Max Mühlhäuser (*TU Darmstadt*)

Paper517: Understanding User Experiences Across VR Walking-in-place Locomotion Methods

Chek Tan (*Singapore Institute of Technology*)
Leon Foo (*Singapore Institute of Technology*)
Adriel Yeo (*Singapore Institute of Technology*)
Jeannie Lee (*Singapore Institute of Technology*)
Edmund Wan (*Singapore Institute of Technology*)
Xiao-Feng Kenan Kok (*Singapore Institute of Technology*)
Megani Rajendran (*Singapore Institute of Technology*)

Paper518: HeadWind: Enhancing Teleportation Experience in VR by Simulating Air Drag during Rapid Motion

Chun-Miao Tseng (*National Taiwan University*)
Po-Yu Chen (*National Taiwan University*)
Shih Chin Lin (*National Taiwan University*)
Yu-Wei Wang (*National Taiwan University*)
Yu-Hsin Lin (*National Taiwan University*)

Mu-An Kuo (*National Taiwan University*)
Neng-Hao Yu (*National Taiwan University of Science and Technology*)
Mike Chen (*National Taiwan University*)

Paper519: Kills, Deaths, and (Computational) Assists: Identifying Opportunities for Computational Support in Esport Learning

Erica Kleinman (*UC Santa Cruz*)
Murtuza Shergadwala (*UC Santa Cruz*)
Magy Seif El-Nasr (*University of California at Santa Cruz*)

Paper520: How AI-Based Training Affected Performance of Professional Go Players

Jimoon Kang (*Yonsei University*)
June-seop Yoon (*Department of Computer Science, Yonsei University*)
Byungjoo Lee (*Yonsei University*)

Papers: Care in the Long Term

Paper521: Trust, Reciprocity, and the Role of Timebanks as Intermediaries: Design Implications for Addressing Healthcare Transportation Barriers

Tawanna Dillahunt (*University of Michigan*)
Juan Maestre (*Indiana University Bloomington*)
Vaishnav Kameswaran (*University of Michigan*)
Erica Poon (*University of Michigan*)
John Osorio Torres (*Indiana University*)
Mia Gallardo (*Indiana University*)
Samantha Rasmussen (*Indiana University*)
Patrick Shih (*Indiana University Bloomington*)
Alice Bagley (*Unity in Our Community TimeBank*)
Samuel Young (*Covenant Community Care, Inc.*)
Tiffany Veinot (*University of Michigan*)

Paper522: Transitioning Toward Independence: Enhancing Collaborative Self-Management of Children with Type 1 Diabetes

Yoon Jeong Cha (*University of Michigan*)
Arpita Saxena (*School of Information*)
Alice Wou (*School of Information*)
Joyce Lee (*University of Michigan*)
Mark Newman (*U. of Michigan*)
Sun Young Park (*University of Michigan*)

Paper523: When Worlds Collide: Boundary Management of Adolescent and Young Adult Childhood Cancer Survivors and Caregivers

Elizabeth Ankrah (*University of California, Irvine*)
Arpita Bhattacharya (*University of California, Irvine*)
Lissamarie Donjuan (*Children's Hospital of Orange County*)
Franceli Cibrian (*Chapman University*)
Lilibeth Torno (*Children's Hospital of Orange County*)
Anamara Ritt Olson (*University of California Irvine*)
Joel Milam (*University of California Irvine*)
Gillian Hayes (*University of California, Irvine*)

Paper524: Investigating Daily Practices of Self-care to Inform the Design of Supportive Health Technologies for Living and Ageing Well with HIV

Caroline Claisse (*Newcastle University*)
Bakita Kasadha (*Terrence Higgins Trust*)
Simone Stumpf (*University of Glasgow*)
Abigail Durrant (*Newcastle University*)

Paper525: The Challenge of (Non-)Disclosure: Exploring the Lived Experience of Ethiopian Adolescents with HIV and Their Attitudes Toward Technology

Alemitu Bezabih (*KU Leuven*)
Kathrin Gerling (*KU Leuven*)
Workeabeba Abebe (*Addis Ababa University*)
Vero Vanden Abeele (*KU Leuven*)

Papers: Instant Messaging & Texting

Paper526: Why Did You/I Read but Not Reply? IM Users' Unresponded Read-Receipt Practices and Explanations

Yu-Ling Chou (*National Tsing Hua University, National Yang Ming Chiao Tung University*)
Yi-Hsiu Lin (*National Yang Ming Chiao Tung University, National Yang Ming Chiao Tung University*)
Tzu-Yi Lin (*Department of Computer Science*)
Hsin Ying You (*National Yang Ming Chiao Tung University, National Yang Ming Chiao Tung University*)
Yung-Ju Chang (*National Yang Ming Chiao Tung University*)

Paper527: EmoBalloon - Conveying Emotional Arousal in Text Chats with Speech Balloons

Toshiki Aoki (*The University of Tokyo*)
Rintaro Chujo (*The University of Tokyo*)
Katsufumi Matsui (*The University of Tokyo*)
Saemi Choi (*Samsung Research*)
Ari Hautasaari (*The University of Tokyo*)

Paper528: "I need to be professional until my new team uses emoji, GIFs, or memes first": New Collaborators' Perspectives on Using Non-Textual Communication in Virtual Workspaces

Esha Shandilya (*Rochester Institute of Technology*)
Mingming Fan (*The Hong Kong University of Science and Technology (Guangzhou), The Hong Kong University of Science and Technology*)
Garreth Tigwell (*Rochester Institute of Technology*)

Paper529: "Because I'm Restricted, 2-4 PM Unable to See Messages": Exploring Users' Perceptions and Likely Practices around Exposing Attention-management Information on IM Statuses

Yu-Ling Chou (*National Tsing Hua University, National Yang Ming Chiao Tung University*)
Yu-Ling Chien (*National Chiao Tung University, National Yang Ming Chiao Tung University*)
Yu-Hsin Lin (*National Taiwan University, National Yang Ming Chiao Tung University*)
Kung-Pai Lin (*National Yang Ming Chiao Tung University, National Yang Ming Chiao Tung University*)
Faye Shih (*Bryn Mawr College, National Yang Ming Chiao Tung University*)
Yung-Ju Chang (*National Yang Ming Chiao Tung University, National Yang Ming Chiao Tung University*)

Papers: Broadening Design

Paper530: How HCI Adopts Service Design: Unpacking Current Perceptions and Scopes of Service Design in HCI and Identifying Future Opportunities

Jung-Joo Lee (*National University of Singapore*)
Christine Ee Ling Yap (*National University of Singapore*)
Virpi Roto (*Aalto University*)

Paper531: A study of UX Practitioners Roles in Designing Real-World, Enterprise ML Systems

Sabah Zdanowska (*City, University of London*)
Alex Taylor (*City*)

Paper532: The Electronicists: Building Techno-aesthetic Practice for Supporting Nonlinear Practitioners in HCI

Laewoo Kang (*Cornell University*)
Steven Jackson (*Cornell University*)
Trevor Pinch (*Cornell University*)

Paper533: Designing for Inaccessible Emergency Medical Service Contexts: Development and Evaluation of the Contextual Secondary Video Toolkit

Paul Schlosser (*The University of Queensland*)
Ben Matthews (*University of Queensland*)

Paper534: Co-Imagining the Future of Playable Cities: A Bottom-Up, Multi-Stakeholder Speculative Inquiry into the Playful Potential of Urban Technology

Ferran Altarriba Bertran (*UC Santa Cruz*)
Laura Bisbe Armengol (*Universitat de Girona*)
Cameron Cooke (*UC Santa Cruz*)
Ivy Chen (*UC Santa Cruz*)
Victor Dong (*UC Santa Cruz*)
Binaisha Dastoor (*UC Santa Cruz*)
Kelsea Tadano (*UC Santa Cruz*)
Fyez Dean (*UC Santa Cruz*)
Jessalyn Wang (*UC Santa Cruz*)
Adrià Altarriba Bertran (*Jocs al Segon*)
Jared Duval (*University of California Santa Cruz*)
Katherine Isbister (*University of California Santa Cruz*)

Papers: Interacting with Smart Technology

Paper535: When Confidence Meets Accuracy: Exploring the Effects of Multiple Performance Indicators on Trust in Machine Learning Models

Amy Rechkemmer (*Purdue University*)
Ming Yin (*Purdue University*)

Paper536: Informing Age-Appropriate AI: Examining Principles and Practices of AI for Children

Ge Wang (*University of Oxford*)
Jun Zhao (*University of Oxford*)
Max Van Kleek (*University of Oxford*)
Nigel Shadbolt (*University of Oxford*)

Paper537: GANSpiration: Balancing Targeted and Serendipitous Inspiration in User Interface Design with Style-Based Generative Adversarial Network

Mohammad Amin Mozaffari (*Polytechnique Montreal*)
Xinyuan Zhang (*Polytechnique Montreal*)
Jinghui Cheng (*Polytechnique Montreal*)
Jin L.C. Guo (*McGill University*)

Paper538: Towards Sign Language-Centric Design of ASL Survey Tools

Shruti Mahajan (*Worcester Polytechnic Institute*)
Zoey Walker (*ASL Ed Center*)
Rachel Boll (*ASL Ed Center*)
Michelle Santacreu (*Worcester Polytechnic Institute*)
Ally Salvino (*Worcester Polytechnic Institute*)
Michael Westfort (*ASL Ed Center*)
Jeanne Reis (*ASL Ed Center*)
Erin Solovey (*Worcester Polytechnic Institute*)

Paper539: We Play and Learn Rhythmically: Gesture-based Rhythm Game for Children with Intellectual Developmental Disabilities to Learn Manual Sign

Youjin Choi (*Gwangju Institute of Science and Technology*)
JooYeong Kim (*Gwangju Institute of Science and Technology*)
Chan Woo Park (*Dankook Univ*)
Jeongyoung Kim (*Chosun University*)
Ji Hyun Yi (*Gwangju Institute of Science and Technology*)
Jin-Hyuk Hong (*Gwangju Institute of Science and Technology, Gwangju Institute of Science and Technology*)

Papers: Design Foundations

Paper540: Diffraction-in-action: Designerly Explorations of Agential Realism Through Lived Data

Pedro Sanches (*ITI/Larsys, Umeå University*)
Noura Howell (*Georgia Institute of Technology*)
Vasiliki Tsaknaki (*IT University of Copenhagen*)
Tom Jenkins (*IT University of Copenhagen*)
Karey Helms (*KTH Royal Institute of Technology*)

Paper541: Recentring Reframing as an RtD Contribution: The Case of Pivoting from Accessible Web Tables to a Conversational Internet

John Zimmerman (*Carnegie Mellon University*)
Aaron Steinfeld (*Carnegie Mellon University*)
Anthony Tomasic (*Carnegie Mellon University*)
Oscar Romero (*Carnegie Mellon University*)

Paper542: One Week in the Future: Previs Design Futuring for HCI Research

Alexander Ivanov (*University of Calgary*)
Tim Au Yeung (*University of Calgary*)
Kathryn Blair (*University of Calgary*)
Kurtis Danyluk (*University of Calgary*)
Georgina Freeman (*University of Calgary*)
Marcus Friedel (*University of Calgary*)
Carmen Hull (*University of Calgary*)
Michael Hung (*University of Calgary*)
Sydney Pratte (*University of Calgary*)
Wesley Willett (*University of Calgary*)

Paper543: Use Cases for Design Personas: A Systematic Review and New Frontiers

Joni Salminen (*Hamad Bin Khalifa University, University of Vaasa*)
Kathleen Guan (*University College London*)
Soon-Gyo Jung (*Hamad Bin Khalifa University*)
Bernard Jansen (*Hamad Bin Khalifa University*)

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Janet Chen (*Cornell University*)
Allison McDonald (*University of Michigan*)
Yixin Zou (*University of Michigan*)
Emily Tseng (*Cornell Tech*)
Kevin Roundy (*NortonLifeLock Research Group*)
Acar Tamersoy (*NortonLifeLock*)
Florian Schaub (*University of Michigan*)
Thomas Ristenpart (*Cornell Tech*)
Nicola Dell (*Cornell Tech*)

Paper545: Interrupting Merit, Subverting Legibility: Navigating Caste In 'Casteless' Worlds of Computing

Palashi Vaghela (*Cornell University*)
Steven Jackson (*Cornell University*)
Phoebe Sengers (*Cornell University*)

Paper546: Maker Technology and the Promise of Empowerment in a Flemish School for Disabled Children

Bert Vandenberghe (*KU Leuven*)
Kathrin Gerling (*KU Leuven*)
Luc Geurts (*KU Leuven*)
Vero Vanden Abeele (*KU Leuven*)

Paper547: ADHD and Technology Research – Investigated by Neurodivergent Readers

Katta Spiel (*TU Wien*)
Eva Hornecker (*Bauhaus-Universität Weimar*)
Rua Williams (*University of Florida*)
Judith Good (*University of Sussex*)

Paper548: From Treatment to Healing: Envisioning a Decolonial Digital Mental Health

Sachin Pendse (*Georgia Institute of Technology*)
Daniel Nkemelu (*Georgia Institute of Technology*)
Nicola Bidwell (*International University of Management*)
Sushrut Jadhav (*University College London*)
Soumitra Pathare (*Centre for Mental Health Law and Policy*)
Munmun De Choudhury (*Georgia Institute of Technology*)
Neha Kumar (*Georgia Tech*)

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Yi Fei Cheng (*Swarthmore College*)
Hang Yin (*Carnegie Mellon University*)
Yukang Yan (*Tsinghua University*)
Jan Gugenheimer (*Institut Polytechnique de Paris*)
David Lindlbauer (*Carnegie Mellon University*)

Paper550: Exploring Spatial UI Transition Mechanisms with Head-Worn Augmented Reality

Feiyu Lu (*Virginia Tech*)
Yan Xu (*Facebook*)

Paper551: Paracentral and near-peripheral visualizations: Towards attention-maintaining secondary information presentation on OHMDs during in-person social interactions

Nuwan Janaka (*National University of Singapore*)
Chloe Haigh (*National University of Singapore*)
Hyeongcheol Kim (*National University of Singapore*)
Shan Zhang (*National University of Singapore*)
Shengdong Zhao (*National University of Singapore*)

Paper552: Dually Noted: Layout-Aware Annotations with Smartphone Augmented Reality

Jing Qian (*Brown University, Brown University*)
Qi Sun (*New York University, New York University*)
Curtis Wigington (*Adobe Research, Adobe Research*)
Han Han (*Université Paris-Saclay, CNRS, Inria, Université Paris-Saclay, CNRS, Inria*)
Tong Sun (*Adobe Research, Adobe Research*)
Jennifer Healey (*Adobe Research, Adobe Research*)
James Tompkin (*Brown University, Brown University*)
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Paper553: Augmented Reality and Robotics: A Survey and Taxonomy for AR-enhanced Human-Robot Interaction and Robotic Interfaces

Ryo Suzuki (*University of Calgary*)
Adnan Karim (*University of Calgary*)
Tian Xia (*University of Calgary*)
Hooman Hedayati (*University of Colorado Boulder*)
Nicolai Marquardt (*University College London, Microsoft Research*)

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Camille Gobert (*Université Paris-Saclay*)

Michel Beaudouin-Lafon (*Université Paris-Saclay, CNRS, Inria*)

Paper555: Overcoming Legacy Bias: Re-Designing Gesture Interactions in Virtual Reality With a San Community in Namibia

Emilie Arendtthorp (*Aalborg University*)

Kasper Rodil (*Aalborg University*)

Heike Winschiers-Theophilus (*Namibia University of Science and Technology*)

Christof Magoath (*Independent Researcher*)

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Eugene Taranta (*University of Central Florida*)

Mykola Maslych (*University of Central Florida*)

Ryan Ghamandi (*UCF*)

Joseph LaViola (*University of Central Florida*)

Paper557: Guided Bug Crush: Assist Manual GUI Testing of Android Apps via Hint Moves

Zhe Liu (*Institute of Software, Chinese Academy of Sciences, Institute of Software, Chinese Academy of Sciences*)

Chunyang Chen (*Monash University, Monash University*)

Junjie Wang (*Institute of Software, Chinese Academy of Sciences, Institute of Software, Chinese Academy of Sciences*)

Yuekai Huang (*University of Chinese Academy of Sciences, Beijing, China; Laboratory for Internet Software Technologies, Institute of Software Chinese Academy of Sciences, Beijing, China; University of Chinese Academy of Sciences, Beijing, China; Laboratory for Internet Software Technologies, Institute of Software Chinese Academy of Sciences, Beijing, China;*)

Jun Hu (*Institute of Software Chinese Academy of Sciences, Institute of Software Chinese Academy of Sciences*)

Qing Wang (*Institute of Software Chinese Academy of Sciences, Institute of Software Chinese Academy of Sciences*)

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Andreea Danielescu (*Accenture Labs*)

David Piorkowski (*IBM Research*)

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Josh Aaron Miller (*Northeastern University*)

Seth Cooper (*Northeastern University*)

Paper560: Prevalence and Salience of Problematic Microtransactions in Top-Grossing Mobile and PC Games: A Content Analysis of User Reviews

Elena Petrovskaya (*University of York*)

Sebastian Deterding (*University of York*)

David Zendle (*University of York*)

Paper561: Avatar Identities and Climate Change Action in Video Games: Analysis of Mitigation and Adaptation Practices

Daniel Fernández Galeote (*Tampere University*)

Nikoletta-Zampeta Legaki (*Tampere University*)

Juho Hamari (*Tampere University*)

Paper562: "Chat Has No Chill": A Novel Physiological Interaction for Engaging Live Streaming Audiences

Raquel Robinson (*University of Saskatchewan*)

Ricardo Rheeder (*University of Saskatchewan*)

Madison Klarkowski (*University of Saskatchewan*)

Regan Mandryk (*University of Saskatchewan*)

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Qiao Jin (*University of Minnesota*)

Yu Liu (*University of Minnesota*)

Svetlana Yarosh (*University of Minnesota*)
Bo Han (*George Mason University*)
Feng Qian (*University of Minnesota*)

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Gloria Fernandez-Nieto (*University of Technology Sydney*)
Pengcheng An (*University of Waterloo*)
Jian Zhao (*University of Waterloo*)
Simon Buckingham Shum (*University of Technology Sydney*)
Roberto Martinez-Maldonado (*Monash University*)

Paper565: Bringing Patient Mannequins to Life: 3D Projection Enhances Nursing Simulation

Guoyang Zhou (*Purdue University*)
Amy Nagle (*Purdue University*)
George Takahashi (*Purdue University*)
Tera Hornbeck (*Purdue University*)
Ann Loomis (*Purdue University*)
Beth Smith (*Purdue University*)
Bradley Duerstock (*Purdue University*)
Denny Yu (*Purdue University*)

Paper566: Towards Modeling of Virtual Reality Welding Simulators to promote Accessible and Scalable Training

Ananya Ipsita (*Purdue University, Purdue University*)
Levi Erickson (*Purdue University, Purdue University*)
Yangzi Dong (*Purdue University, Purdue University*)
Joey Huang (*University of California, Irvine, University of California, Irvine*)
Alexa Bushinski (*Purdue University, Purdue University*)
Sraven Saradhi (*Purdue University, Purdue University*)
Ana Villanueva (*Purdue University, Purdue University*)
Kylie Pepler (*University of California, Irvine, University of California, Irvine*)
Thomas Redick (*Purdue University, Purdue University*)
Karthik Ramani (*Purdue University, Purdue University*)

Paper567: ZenVR: Design Evaluation of a Virtual Reality Learning System for Meditation

Rachel Feinberg (*Georgia Institute of Technology*)
Udaya Lakshmi (*Georgia Institute of Technology*)
Matthew Golino (*Georgia Institute of Technology*)
Rosa Arriaga (*Georgia Institute of Technology*)

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Cecilia Panigutti (*Scuola Normale Superiore*)
Andrea Beretta (*CNR - Italian National Research Council*)
Fosca Giannotti (*Scuola Normale Superiore*)
Dino Pedreschi (*University of Pisa*)

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Hai Dang (*University of Bayreuth*)
Lukas Mecke (*Bundeswehr University Munich, LMU Munich*)
Daniel Buschek (*University of Bayreuth*)

Paper570: UX Research on Conversational Human-AI Interaction: A Literature Review of the ACM Digital Library

Qingxiao Zheng (*University of Illinois at Urbana-Champaign*)
Yiliu Tang (*University of Illinois at Urbana-Champaign*)

Yiren Liu (*University of Illinois Urbana-Champaign*)
Weizi Liu (*University of Illinois, Urbana-Champaign*)
Yun Huang (*University of Illinois at Urbana-Champaign*)

Paper571: The Trusted Listener: The Influence of Anthropomorphic Eye Design of Social Robots on User's Perception of Trustworthiness

Xinyu Zhu (*Shanghai Jiao Tong University*)
Xingguo Zhang (*Shanghai Jiao Tong University*)
Zinan Chen (*Shanghai Jiao Tong University*)
Zhanxun DONG (*Shanghai Jiao Tong University*)
Zhenyu Gu (*Shanghai Jiao Tong University*)
Danni Chang (*Shanghai Jiao Tong university*)

Paper572: Model Positionality and Computational Reflexivity: Promoting Reflexivity in Data Science

Scott Cambo (*Northwestern University*)
Darren Gergle (*Northwestern University*)

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Niall Docherty (*Microsoft Research*)
Asia Biega (*Max Planck Institute for Security and Privacy*)

Paper574: The Village: Infrastructuring Community-based Mentoring to Support Adults Experiencing Poverty

Tawanna Dillahunt (*University of Michigan*)
Alex Jiahong Lu (*University of Michigan*)
Aarti Israni (*University of Michigan*)
Ruchita Lodha (*University of Michigan*)
Savana Brewer (*Eastside Community Network*)
Tiera Robinson (*Wayne State University*)
Angela Brown Wilson (*Eastside Community Network*)
Earnest Wheeler (*University of Michigan*)

Paper575: Unpacking the Complexities of Community-led Violence Prevention Work

Sheena Erete (*DePaul University*)
Jessa Dickinson (*DePaul University*)
Alejandra Gonzalez (*DePaul University*)
Yolanda Rankin (*FLORIDA STATE UNIVERSITY*)

Paper576: Putting the Waz on Social Media: Infrastructuring Online Islamic Counterpublic through Digital Sermons in Bangladesh

Mohammad Rashidujjaman Rifat (*University of Toronto, University of Toronto*)
Hasan Mahmud Prottoy (*University of Maryland, Baltimore County*)
Syed Ishtiaque Ahmed (*University of Toronto*)

Paper577: 'ShishuShurokkha': A Transformative Justice Approach for Combating Child Sexual Abuse in Bangladesh

Sharifa Sultana (*Cornell University*)
Sadia Tasnuva Pritha (*CUET*)
Rahnuma Tasnim (*CUET*)
Anik Das (*St. Francis Xavier University*)
Rokeya Akter (*Khulna University*)
Shaid Hasan (*BUET*)
S.M. Raihanul Alam (*BUET*)
Muhammad Ashad Kabir (*Charles Sturt University*)
Syed Ishtiaque Ahmed (*University of Toronto*)

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Paper578: Owning Mistakes Sincerely: Strategies for Mitigating AI Errors

Amama Mahmood (*Johns Hopkins University*)
Jeanie Fung (*Johns Hopkins University*)
Isabel Won (*The Johns Hopkins University*)
Chien-Ming Huang (*Johns Hopkins University*)

Paper579: Exploring Technical Reasoning in Digital Tool Use

Miguel Renom (*Université Paris-Saclay, CNRS, Inria*)
Baptiste Caramiaux (*Sorbonne Université, CNRS, ISIR*)
Michel Beaudouin-Lafon (*Université Paris-Saclay, CNRS, Inria*)

Paper580: What's the Appeal? Perceptions of Review Processes for Algorithmic Decisions

Henrietta Lyons (*University of Melbourne*)
Senuri Wijenayake (*The University of Sydney*)
Tim Miller (*University of Melbourne*)
Eduardo Velloso (*University of Melbourne*)

Paper581: "Look! It's a Computer Program! It's an Algorithm! It's AI!": Does Terminology Affect Human Perceptions and Evaluations of Algorithmic Decision-Making Systems

Markus Langer (*Universität des Saarlandes*)
Tim Hunsicker (*Universität des Saarlandes*)
Tina Feldkamp (*Universität des Saarlandes*)
Cornelius König (*Universität des Saarlandes*)
Nina Grgić-Hlača (*Max Planck Institute for Software Systems, Max Planck Institute for Research on Collective Goods*)

Paper582: Whose AI Dream? In search of the aspiration in data annotation

Ding Wang (*Google Research India*)
Shantanu Prabhat (*Google research*)
Nithya Sambasivan (*Google Research India*)

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Paper583: The CAT Effect: Exploring the Impact of Casual Affective Triggers on Online Surveys' Response Rates

Irene-Angelica Chounta (*University of Duisburg-Essen*)
Alexander Nolte (*University of Tartu*)

Paper584: Exploring the Role of Paradata in Digitally Supported Qualitative Co-Research

Jay Rainey (*Newcastle University*)
Siobhan Macfarlane (*Newcastle University*)
Aare Puussaar (*Northumbria University*)
Vasilis Vlachokyriakos (*Newcastle University*)
Roger Burrows (*Newcastle University*)
Jan Smeddinck (*Ludwig Boltzmann Institute for Digital Health and Prevention*)
Pamela Briggs (*Northumbria University*)
Kyle Montague (*Northumbria University*)

Paper585: "It's Freedom to Put Things Where My Mind Wants": Understanding and Improving the User Experience of Structuring Data in Spreadsheets

George Chalhoub (*Microsoft Research*)
Advait Sarkar (*Microsoft Research*)

Paper586: Establishing Design Consensus toward Next-Generation Retail: Data-Enabled Design Exploration and Participatory Analysis

Yuan Yao (*Tsinghua University*)
Junai Cai (*The Hong Kong University of Science and Technology*)
Kexin Du (*University of Chinese Academy of Social Sciences*)

Yuxuan Hou (*School of Visual Arts*)
Haipeng Mi (*Tsinghua University*)

Paper587: The Deskilling of Domain Expertise in AI Development

Nithya Sambasivan (*Google Research India*)
Rajesh Veeraraghavan (*Georgetown University*)

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Paper588: Understanding Challenges for Developers to Create Accurate Privacy Nutrition Labels

Tianshi Li (*Carnegie Mellon University, Carnegie Mellon University*)
Kayla Reiman (*Carnegie Mellon University, Carnegie Mellon University*)
Yuvraj Agarwal (*Carnegie Mellon University, Carnegie Mellon University*)
Lorrie Cranor (*Carnegie Mellon University, Carnegie Mellon University*)
Jason I. Hong (*Carnegie Mellon University, Carnegie Mellon University*)

Paper589: How Ready is Your Ready? Assessing the Usability of Incident Response Playbook Frameworks

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Cheuk Yin Phipson Lee (Carnegie Mellon University)
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