



Conference Reports

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This section is compiled from reports of recent events sponsored or run in cooperation with ACM SIGAI. In general these reports were written and submitted by the conference organisers.

The 28th ACM Conference on Intelligent User Interfaces (IUI 2023)

Sydney, Australia, Mar 27-31, 2023

<https://iui.acm.org/2023/>

The venue for the IUI 23 conference was the Aerial University of Technology Sydney (UTS) Function Centre, located in central Sydney, Australia, and on the grounds of the UTS. The Aerial Function Centre provided a genuinely flexible space, with fully integrated catering services, and several presentation spaces. The venue was next door to the Central train station and part of a precinct that is home to the ABC, the Powerhouse Museum, TAFE Ultimo, the International Convention Centre (ICC), Darling Harbour and Chinatown. So, it was easy to travel to, and was surrounded by a number of tourist locations.

The conference was held between 27 and 31 March 2023, with tutorials, a doctoral consortium, and workshops on March 27th, and paper presentations from March 28th – 31st.

The main conference objective is to enable researchers from academia and industry to present their research in Intelligent User Interfaces and exchange ideas about the latest work in the space.

The theme for this year was Resilience, covering a wide variety of topics, such as COVID-19 recovery, organizational cyber resilience, economic growth and stability, climate change recovery, intelligent user interface resilience, and similar subjects. While we encouraged submissions related to this theme, the scope of the conference was not limited to the theme only.

As always, contributions to IUI were expected to be supported by rigorous evidence appro-

priate to the claims (e.g., user study, system evaluation, computational analysis). Contributions were welcome from all relevant arenas, including academia, industry, government, and non-profit organizations. We strongly believe that diverse insights are critical to the vitality of the IUI community and so the conference accepted papers for both long and short oral presentations.

The goal of the workshops was to provide a venue for presenting research on focused topics of interest and an informal forum to discuss research questions and challenges. Tutorials were designed to provide fundamental knowledge and experience on topics related to intelligent user interfaces, and the intersection between Human-Computer Interaction (HCI) and Artificial Intelligence (AI).

The audience was from all relevant arenas, including academia, industry, government, and non-profit organizations.

The Keynote speakers were:

Prof Joyce Chai - The University of Michigan, (Tuesday, March 28th). Pragmatic Communication with Embodied Agents. With the emergence of a new generation of embodied AI agents (e.g., cognitive robots), it has become increasingly important to empower these agents with the ability to learn and collaborate with humans through language communication. Despite recent advances, language communication in embodied AI still faces many challenges. Human language not only needs to ground to agents' perception and action but also needs to facilitate collaboration between humans and agents. To address these challenges, I will introduce several efforts in my lab that study pragmatic communication with embodied agents. I will talk about how language use is shaped by shared experience and knowledge (i.e., common ground) and how collaborative effort is important to mediate perceptual differences and handle exceptions. I will discuss task learning by following language instructions and highlight the need for neurosymbolic representations

for situation awareness and transparency. I will further present explicit modeling of partners' goals, beliefs, and abilities (i.e., theory of mind) and discuss its role in language communication for situated collaborative tasks.

Mark Sagar, CEO of Soul Machines, (Wednesday, March 29th). Breathing life into the Machine. This talk will give an overview of the advances in AI that have enabled the development of autonomous virtual characters with life like behaviours. Drawing from the research and development undertaken at Soul Machines, examples will be shown of virtual characters that recognize and respond to human emotion, learn human-like behaviours, and provide a realistic human face to computers interfaces. The research challenges for the next generation of digital humans will be outlined and examples of how they could transform human computer interaction.

Grace Chung - Head of Research, Google Australia, (Friday, March 31st). Recent Advances in AI from Google Brain. In 2022 Google Research Australia (GRA) was announced as part of the Digital Future initiative, a program aimed at contributing to a stronger digital future for Australians. GRA is a part of Google Brain, an arm of research that has significantly shaped the evolution of AI. In this talk I will explore the history of disruptive innovations within Google Brain, some of the exciting trends in Machine Learning and I will showcase some of the recent advances in generative AI and the use of AI for creativity.

Best Paper Award . Appropriate Reliance on AI Advice: Conceptualization and the Effect of Explanations, by Max Schemmer, Niklas Kuehl, Carina Benz, Andrea Bartos, and Gerhard Satzger

Best Paper Honorable Mention . Interacting with Next-Phrase Suggestions: How Suggestion Systems Aid and Influence the Cognitive Processes of Writing, by Advait Bhat, Saaket Agashe, Parth Oberoi, Niharika Mohile, Ravi Jangir, and Anirudha Joshi. ScatterShot: Interactive In-context Example Curation for Text Transformation, by Sherry Wu, Hua Shen, Daniel S Weld, Jeffrey Heer, and Marco Tulio Ribeiro

Best Poster Award . Matchmaking for Mental Well-being: Development of a Peer-

based Support System (Peer2S) for Students during COVID Lockdown, by Wan-Jou She, Kota Dangisho, Panote Siriaraya, Felix Dollack, and Shinsuke Nakajima

Best Poster Honorable Mention Fair and Robust Metric for Evaluating Touch-based Continuous Mobile Device Authentication, by Masashi Kudo, Tsubasa Takahashi, Shojiro Ushiyama, and Hayato Yamana. Using Redirection to Create a Swimming Experience in VR for the Sitting Position, by Chenyang Cai, Jian He, and Tianren Luo

Best Demonstration Award A User Interface for Explaining Machine Learning Model Explanations, by Md Abdul Kadir, Abdulrahman Mohamed Selim, Michael Barz, and Daniel Sonntag

Best Demonstration Honorable Mention . Interactive Fixation-to-AOI Mapping for Mobile Eye Tracking Data based on Few-Shot Image Classification, by Michael Barz, Omair Shahzad Bhatti, Hasan Md Tufiqur Alam, Duy Minh Ho Nguyen, and Daniel Sonntag. The Programmer's Assistant User Experience, by Steven I. Ross, Stephanie Houde, Fernando Martinez, Michael Muller, and Justin D. Weisz

Proceedings can be found in the ACM digital library (<https://dl.acm.org/conference/iui>)

4th International Conference on Deep Learning Theory and Applications (DeLTA 2023)

Rome, Italy, July 13 to 14, 2023

<https://delta.scitevents.org>

DeLTA 2023 was held in Rome, Italy, from July 13 to 14, 2023. It was sponsored by the Institute for Systems and Technologies of Information, Control and Communication (INSTICC), and endorsed by International Association for Pattern Recognition. DeLTA 2023 was also organized in cooperation with the ACM Special Interest Group on Artificial Intelligence, International Neural Network Society, Società Italiana di Reti Neuroniche, and the European Society for Fuzzy Logic and Technology.

Deep Learning and Big Data Analytics are two major topics of data science, nowadays, and they were the focus of this conference. Big Data has become important in practice, as

many organizations have been collecting massive amounts of data that can contain useful information for business analysis and decisions, impacting existing and future technology. A key benefit of Deep Learning is the ability to process these data and extract high-level complex abstractions as data representations, making it a valuable tool for Big Data Analytics where raw data is largely unlabeled.

Machine-learning and artificial intelligence are pervasive in most real-world applications scenarios such as computer vision, information retrieval and summarization from structured and unstructured multimodal data sources, natural language understanding and translation, and many other application domains. Deep learning approaches, leveraging on big data, are outperforming state-of-the-art more “classical” supervised and unsupervised approaches, directly learning relevant features and data representations without requiring explicit domain knowledge or human feature engineering. These approaches are currently highly important in IoT applications.

DeLTA received 42 paper submissions from 20 countries. To evaluate each submission, a double-blind paper review was performed by the Program Committee. After a stringent selection process, 21.43% of the papers were published and presented as full papers, i.e. completed work (12 pages/25’ oral presentation).

In addition to the presentation sessions, DeLTA 2023 included outstanding keynote lectures, which are relevant to today’s lines of research and technical innovation. These talks were presented by internationally distinguished researchers, namely:

- Luís Paulo Reis, University of Porto, Portugal: Deep Reinforcement Learning to Improve Traditional Supervised Learning Methodologies
- Davide Bacciu, University of Pisa, Italy: Pervasive AI: (deep) Learning into the Wild

Additionally, a “Best Paper Award”, “Best Student Paper Award” and “Best Poster Award” were conferred during the conference. More information can be found at: <https://delta.scitevents.org/PreviousAwards.aspx>



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