First Workshop on User Perspectives in Human-Centred Artificial Intelligence (HCAI4U)

Ernesto William De Luca
Otto von Guericke University
Magdeburg
Magdeburg, Germany
Leibniz Institute for Educational
Media | Georg Eckert Institute
Brunswick, Germany
deluca@gei.de

Erasmo Purificato
Otto von Guericke University
Magdeburg
Magdeburg, Germany
Leibniz Institute for Educational
Media | Georg Eckert Institute
Brunswick, Germany
erasmo.purificato@ovgu.de

Ludovico Boratto
University of Cagliari
Cagliari, Italy
ludovico.boratto@acm.org

Stefano Marrone
University of Naples Federico II
Naples, Italy
stefano.marrone@unina.it

Carlo Sansone
University of Naples Federico II
Naples, Italy
carlo.sansone@unina.it

ABSTRACT

The emerging concept of *Human-Centred Artificial Intelligence* (HCAI) involves the amplification, augmentation, empowerment, and enhancement of individuals. The goal of HCAI is to ensure that AI meets our needs while also operating transparently, delivering fair and equitable outcomes, and respecting privacy, all while preserving human control. This approach involves multiple stakeholders, such as researchers, developers, business leaders, policy makers, and users, who are affected in various ways by the implementation and evaluation of AI systems.

The primary focus of the First Workshop on User Perspectives in Human-Centred Artificial Intelligence (HCAI4U) is to examine the potential positive and negative impacts of automated decision-making systems on end-users, as well as how their interaction with AI is influenced by human-centred aspects of reliability, safety, and fairness. The workshop aims to facilitate discussion and exchange of ideas among the community on advances in developing trustworthy, fair, and privacy-preserving systems, as well as user interfaces that are explainable, with a specific focus on the users' perception in real-world scenarios rather than solely on the algorithmic and model performance. Additionally, HCAI4U aims to foster cross-disciplinary and interdisciplinary discussions between experts from various research fields, such as computer science, psychology, sociology, law, medicine, business, etc., to discuss problems and synergies in this exciting research topic.

CCS CONCEPTS

• **Human-centered computing** → **HCI design and evaluation methods**; • **Computing methodologies** → **Philosophical/theoretical foundations of artificial intelligence**; • **Social and professional topics** → **User characteristics**.

KEYWORDS

Human-Centred Artificial Intelligence, Human-Computer Interaction, Artificial Intelligence, User Perspectives, Reliability, Trustworthiness, Explainability, Fairness

1 MOTIVATION AND OBJECTIVES

Living in the current digital era, the interaction with artificial intelligence (AI) systems has become, consciously or not, an integral part of everyone's life. Machine learning (ML) and deep learning (DL) technologies have lately achieved significant success and are widely acknowledged for their capabilities, especially with the advent and widespread of generative models, like DALL-E 2[1] (based on ImageGPT [1]), and large language models such as ChatGPT[2] [2]. It is widely believed that the next stage in their development will focus on making them more *human-centred*. Shneiderman [3] has provided the foremost explanation of the novel concept of *Human-Centred Artificial Intelligence* (HCAI), which involves the amplification, augmentation, empowerment, and enhancement of individuals. Rather than emphasising technologies that independently perform tasks, the objective is to create technologies that allow individuals to carry out their tasks with much greater efficiency. This approach of empowering individuals has been the

---

[1]https://openai.com/product/dall-e-2
[2]https://openai.com/blog/chatgpt

CHItaly 2023, September 20–22, 2023, Torino, Italy

De Luca E.W., Purificato E., Boratto L., Marrone S., Sansone C.

aim of technology from the outset, as exemplified by information networks, the internet, emails, digital navigation, and digital photography. The utmost importance is given to *human values* such as people's rights, justice, and dignity. HCAI seeks to preserve human control in a way that ensures AI meets our needs while also operating transparently, delivering fair and equitable outcomes, and respecting privacy. There are several *stakeholders* in this process, including researchers, developers, business leaders, policy makers and users, each affected differently by this new approach to implementing and evaluating AI systems.

In particular, the First Workshop on User Perspectives in Human-Centred Artificial Intelligence (HCAI4U) concentrates on the potential positive and negative impacts of automated decision-making systems on the actual end-users of the same and how their interaction with AI is being influenced by the human-centred aspects of *reliability*, *safety* and *fairness*. In this workshop, we aim to discuss and exchange ideas within the community about the advances in the development of trustworthy, fair and privacy-preserving systems, as well as explainable user interfaces, with a specific focus on the users' perception in real-world scenarios and not (only) on the algorithmic and model performance. Moreover, HCAI4U is intended to foster a cross-disciplinary and interdisciplinary discussion between experts from different fields (e.g. computer science, psychology, sociology, law, medicine, business, etc.) to discuss problems and synergies in this exciting research topic.

Topics of interest include, but are not limited to:

- Design and evaluation of reliable, safe and trustworthy systems;
- Empirical studies and evaluation of HCAI systems in real-world scenarios;
- Human-in-the-loop for HCAI systems;
- Potential threats for users in HCAI systems;
- Bias detection and mitigation strategies in real-world scenarios;
- Novel approaches to Human-Computer Interaction in HCAI systems;
- Innovative methods for designing HCAI systems;
- Novel metrics for HCAI systems;
- Privacy-preserving systems;
- User-adaptive explainable systems;
- Explainable user interfaces;
- Adaptive and personalised user interfaces;
- Transparent user profiling approaches.

2 WORKSHOP PROGRAM

The program provides a good balance between the different topics covered by the workshops, including five papers (selected from seven submissions, after a rigorous reviewing process conducted by an international program committee) and one invited talk held by a distinguished researcher in the area of Human-Centred Artificial Intelligence. The papers will be published on a CEUR Workshop Proceedings volume[3].

---

[3]http://ceur-ws.org/

2.1 Accepted papers

- "*Et Machina: Exploring the Use of Conversational Agents such as ChatGPT in Scientific Writing*", authored by Khaled Kassem (TU Wien, Austria) and Florian Michahelles (TU Wien, Austria).
- "*GNN-Based Explainable Recommendation Systems: Are We Rigorously Evaluating Explanations?*", authored by Andrea Montagna (University of Padua, Italy), Alvise De Biasio (University of Padua, Italy), Nicolò Navarin (University of Padua, Italy) and Fabio Aiolli (University of Padua, Italy).
- "*Can Justice be a Measurable Value for AI? Proposed Evaluation of the Relationship Between NLP Models and Principles of Justice*", authored by Lidia Marassi (University of Naples Federico II, Italy), Narendra Patwardhan (University of Naples Federico II, Italy) and Francesco Gargiulo (National Research Council of Naples, Italy).
- "*Designing Human-Centric Foundation Models*", authored by Narendra Patwardhan (University of Naples Federico II), Shreya Shetye (Deepkapha AI Research, Netherlands), Lidia Marassi (University of Naples Federico II, Italy), Monica Zuccarini (University of Naples Federico II, Italy), Tannistha Maiti (Deepkapha AI Research, Netherlands) and Tarry Singh (Deepkapha AI Research, Netherlands).
- "*Artificial Intelligence, Robotics and Fundamental Rights*", authored by Massimiliano Delfino (University of Naples Federico II, Italy).

2.2 Invited talk

- "*User Perspectives in Fair Recommender Systems: A Paradigm Shift*"
  - Speaker: Mirko Marras, Assistant Professor at University of Cagliari, Italy.
  - The landscape of recommender systems has experienced a transformative shift in recent years, fuelled by the urgent need to address the ethical challenges surrounding algorithmic biases and the quest for fairness. In this talk, we delve into the central role of user perspectives, recognising their significance as key drivers for constructing fair recommendation algorithms. Through real-world case studies, we first unveil the profound impact of biased recommendations on individuals, communities, and society at large. We expose the potential consequences of these biases, shedding light on the necessity for change. With this critical backdrop in mind, we showcase and discuss recent debiasing techniques that, by embracing user perspectives, can lead to more inclusive and representative recommender systems, thereby fostering trust and engagement among users.

3 WORKSHOP PROGRAM COMMITTEE

List of the members of the workshop program committee that evaluated the workshop submissions:

- Giacomo Balloccu, University of Cagliari, Italy
- Federica Cena, University of Turin, Italy
- Soumick Chatterjee, Human Technopole, Milan, Italy
- Cristina Gena, University of Turin, Italy

- Dietmar Jannach, University of Klagenfurt, Austria
- Styliani Kleanthous, Open University of Cyprus
- Bart Knijnenburg, Clemson State University, USA
- Peter Knees, TU Wien, Austria
- Benedikt Loepp, University of Duisburg-Essen, Germany
- Mirko Marras, University of Cagliari, Italy
- Noemi Mauro, University of Turin, Italy
- Cataldo Musto, University of Bari, Italy
- Ladislav Peska, Charles University, Prague, Czechia
- Claudio Pomo, Polytechnic University of Bari, Italy
- Amon Rapp, University of Turin, Italy
- Sabine Wehnert, Leibniz Institute for Educational Media | Georg Eckert Institute, Brunswick, Germany
- Markus Zanker, Free University of Bozen-Bolzano, Italy
- Jürgen Ziegler, University of Duisburg-Essen, Germany

4 WORKSHOP ORGANISERS

- **Ernesto William De Luca**
  – Affiliations: Otto von Guericke University Magdeburg, Germany; Georg Eckert Institute for International Textbook Research, Brunswick, Germany; Guglielmo Marconi University, Rome, Italy.
  – Email address: deluca@gei.de
  – Webpage: https://ernestodeluca.eu/

- **Erasmo Purificato**
  – Affiliations: Otto von Guericke University Magdeburg, Germany; Leibniz Institute for Educational Media | Georg Eckert Institute, Brunswick, Germany;
  – Email address: erasmo.purificato@ovgu.de
  – Webpage: https://erasmopurif.com/

- **Ludovico Boratto**
  – Affiliations: University of Cagliari, Italy.
  – Email address: ludovico.boratto@acm.org
  – Webpage: https://www.ludovicoboratto.com/

- **Stefano Marrone**
  – Affiliations: University of Naples Federico II, Italy.
  – Email address: stefano.marrone@unina.it
  – Webpage: http://wpage.unina.it/stefano.marrone/

- **Carlo Sansone**
  – Affiliations: University of Naples Federico II, Italy.
  – Email address: carlo.sansone@unina.it
  – Webpage: https://picuslab.dieti.unina.it/

REFERENCES

[1] Mark Chen, Alec Radford, Rewon Child, Jeffrey Wu, Heewoo Jun, David Luan, and Ilya Sutskever. 2020. Generative pretraining from pixels. In *International conference on machine learning*. PMLR, 1691–1703.

[2] Leo Gao, John Schulman, and Jacob Hilton. 2022. Scaling Laws for Reward Model Overoptimization. arXiv:2210.10760 [cs.LG]

[3] Ben Shneiderman. 2022. *Human-centered AI.* Oxford University Press.