

Proceedings of the Workshops at the Fourth International Conference on Hybrid Human-Artificial Intelligence (HHAI-WS 2025) (Preface)

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Abstract

This preface briefly presents the organization and outcomes of the workshop and tutorial days of the Fourth International Conference on Hybrid Human-Artificial Intelligence (HHAI) 2025, introducing the conference topic and giving key highlights of the specifics of the proceedings.

Keywords

hybrid intelligence, hybrid human artificial intelligence

The Fourth International Conference on Hybrid Human-Artificial Intelligence (HHAI) 2025 organized a pre-conference workshop and tutorial track providing a platform for discussing a topic related to Hybrid Human-Artificial Intelligence with an audience specifically interested in that topic in an informal setting (compared to the main conference). The aim was to foster cross-disciplinary interaction, scientific discourse, and creative and critical reflection, rather than just being mini-conferences. Organizers were offered flexibility on formats that best suit the goals of their event.

The workshops were sought through an open call for proposals, and selected based on their relevance to HHAI, scientific quality, organization, and diversity and inclusion. After deliberation, we accepted all but two proposals giving us 4 tutorials, 4 interactive events, and 10 workshops. These are reported below in alphabetical order.

Tutorials

T1 Assessing the Impact of AI-driven Recommenders on Human-AI Ecosystems

Giuliano Cornacchia, Gizem Gezici, Margherita Lalli, Giovanni Mauro, Virginia Morini, Luca Pappalardo, Valentina Pansanella

T2 Data Storytelling with Python and AI

Angelica Lo Duca

T3 LLM-powered Simulations of Social Media Environments

Giulio Rossetti, Salvatore Citraro, Valentina Pansanella, Virginia Morini, Erica Cau, Andrea Failla, Katherine Abramski

T4 The Intersection of Conversational AI and Human-Centered Design: A Practical Guide

Markku Turunen, Biju Thankachan, Sama Rahman, Maria Hartikainen

Interactive Events

I1 Methods4HHAI - Characterizing HHAI As A Research Field: An Interactive Workshop

Ilaria Tiddi, Stephanie Kramer, Michel Oey, Jessica Sorenson, Adam Dahlgren Lindström

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- I2 **Multimodal Interaction Analytics for Hybrid Intelligence Interactive Event**
Andy Nguyen, Fang Kang, Agnes Axelsson, Yueyi Yang, Sanna Järvelä
- I3 **RKEHAC 2025: Second International Workshop on Reciprocal Knowledge Elicitation for Human-Agent Collaboration** Joost Vennekens, Marjolein Deryck, Simon Vandeveld, Christian Fleiner
- I4 **Supporting Human Behaviors Using AI Technology: State of the Art, Challenge and Research Agenda**
Charlotte Gerritsen, Bart Kamphorst, Michel Klein

Workshops

- W1 **AILS 2025: The First Workshop on AI, Labour and Society**
Fosca Giannotti, Guglielmo Meardi, Mario Pianta, Clara Punzi
- W2 **CounseLLMe 2025: Investigating Human-Large Language Model conversations under the lens of cognitive science and complex systems**
Massimo Stella, Edith Haim, Edoardo De Duro
- W3 **Frictional AI 2025: The Second Workshop on Stimulating Cognitive Engagement in Hybrid Decision-Making: Friction, Reliance and Biases**
Chiara Natali, Mohammad Naiseh, Brett M. Frischmann
- W4 **HHAI-KEML 2025: The 1st Workshop on Informing ML with Knowledge Engineering for Hybrid Intelligent Systems**
Shreya Banerjee, Atriya Sen
- W5 **IAIL 2025: the 4th International Workshop on Imagining the AI Landscape After the AI Act**
Lorenzo Mannocci, Francesca Naretto, Francesca Pratesi, Roberta Savella
- W6 **LSAI 2025: 2nd Workshop on Law, Society and Artificial Intelligence: Interdisciplinary perspectives on AI safety**
Vincenzo Calderonio, Vittoria Caponecchia, Giuseppe Colavito, Andrea Failla, Federico Mazzoni, Monique Munarini, Marco Sanchi, Giuseppe Pisano
- W7 **Mind the AI-GAP 2025: Co-Designing Socio-Technical Systems**
Costanza Alfieri, Eleonora Cappuccio, Donatella Donati, Miriam Felici, Marta Marchiori Manerba, Benedetta Muscato, Clara Punzi, Beatrice Savoldi
- W8 **MULTITRUST 2025: The 4th International Workshop on Multidisciplinary Perspectives on Human-AI Team Trust**
Myrthe Tielman, André Meyer-Vitali, Susanne Uusitalo, Alessandra Rossi, Raffaella Esposito
- W9 **SYNERGY 2025: Designing and Building Hybrid Human-AI Systems**
Tommaso Turchi, Alan Dix, Matt Roach, Alessio Malizia, Ben Wilson
- W10 **TCAI 2025: Trustworthy and Collaborative Artificial Intelligence Workshop**
Roberto Pellungrini, Andrea Pugnana, Burcu Sayin, Apoorva Singh, Bruno Lepri

Each workshop solicited papers through an open call for papers and included a program committee for peer-reviewing and selecting the papers.

The workshops were organized as half-day or full-day events (9-10 June, 2025) prior to the main conference (11-13 June, 2025). The events took place at the University of Pisa, Italy, on June 9th, and at the Scuola Normale Superiore of Pisa, Italy, on June 10th. A selection of the workshops and tutorials were combined with a Doctoral Consortium to form the second HHA Summer school, offering early career researchers a chance to learn more about their chosen research domain and network with peers and established researchers in the field.

After the event, workshop organisers were invited to contribute to these proceedings. Participating in the proceedings was optional from the start to allow for as much flexibility and creativity as possible.

This volume includes post-conference papers from the following Workshops and Interactive Events collocated with the Fourth International Conference on Hybrid Human-Artificial Intelligence (HHAI) 2025:

- I4 **Supporting Human Behaviors Using AI Technology: State of the Art, Challenge and Research Agenda**
Charlotte Gerritsen, Bart Kamphorst, Michel Klein
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The papers in this volume are grouped according to the workshop in which they were presented. In addition to this preface, there is a preface for each workshop, which provides details on the workshop topics, organization and program committees, and selection procedure.

We thank the organizers and participants of each workshop for stimulating critical and engaging discussions on the emerging scientific discipline of Hybrid Human-Artificial Intelligence. We would also like to thank the HHAi 2025 Organization Committee for supporting the workshops program.