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HealthUI: Workshop on Intelligent and Interactive Health User Interfaces

Peter Brusilovsky
School of Computing and Information
University of Pittsburgh
Pittsburgh, Pennsylvania, USA
peterb@pitt.edu

Denis Parra
Department of Computer Science
Pontificia Universidad Catolica de
Chile
Santiago, Chile
dparra@ing.puc.cl

Behnam Rahdari
School of Computing and Information
University of Pittsburgh
Pittsburgh, Pennsylvania, USA
ber58@pitt.edu

Shriti Raj
Stanford University
Palo Alto, California, USA
shritir@stanford.edu

Helma Torkamaan
Multi-Actor Systems
Delft University of Technology
Delft, Netherlands
h.torkamaan@tudelft.nl

Abstract

The HealthUI workshop explores the integration of intelligent user interfaces in health and care, focusing on AI-driven solutions that enhance user engagement, support clinical decision-making, and improve health information access. The workshop brings together experts from human-computer interaction, AI, and healthcare to address challenges such as transparency, usability, and ethical considerations in AI-assisted health applications. Topics covered include generative AI for patient and caregiver support, AI-powered clinical decision support, adaptive visualization for consumer health information, and explainable AI in nursing care. Through paper presentations and discussions, the workshop fosters interdisciplinary collaboration to advance intelligent health interfaces that balance technical innovation with user-centric design principles.

CCS Concepts

• **Human-centered computing** → *Interactive systems and tools*; • **Applied computing** → **Consumer health**; **Health care information systems**; **Health informatics**; • **Computing methodologies** → **Artificial intelligence**.

Keywords

Intelligent User Interfaces, Human-Centered AI in Healthcare, Clinical Decision Support Systems, Explainable AI in Healthcare, AI-Driven Health Information Access

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1 Introduction

The integration of AI into health and care has introduced new opportunities to enhance patient experience, optimize clinical workflows, and empower individuals to make informed health decisions. These advancements set the stage for discussions on intelligent user interfaces (IUIs) in health applications, highlighting their role in improving accessibility, decision support, and engagement. The workshop explores how IUIs can bridge the gap between AI-driven innovations and user-centric healthcare solutions, ensuring that emerging technologies align with real-world needs. However, designing effective and intelligent user interfaces for these AI-driven systems remains a complex challenge. IUIs in healthcare must facilitate intuitive interactions between users and advanced technologies, ensuring that AI recommendations are interpretable, reliable, ethical, and aligned with user needs.

As the demand for AI-driven health solutions grows, ensuring trust and personalization in these systems has become increasingly important. Patients managing chronic conditions, clinicians leveraging AI for decision support, and caregivers assisting loved ones all require interfaces that adapt to their specific needs while maintaining usability and transparency. IUIs must balance the automation potential of AI with human oversight, addressing ethical concerns such as algorithmic bias, data privacy, and the risk of over-reliance on AI-generated recommendations.

This workshop seeks to foster an interdisciplinary dialogue that bridges human-computer interaction, AI, psychology, and healthcare. By bringing together experts from these fields, HealthUI will facilitate discussions on designing IUIs that enhance user engagement, improve decision-making, and promote ethical AI adoption in healthcare. Through presentations, discussions, and interactive sessions, this workshop will provide an opportunity to share cutting-edge research and generate insights that guide the future development of intelligent health interfaces.

2 Intelligent User-Centered Health Interfaces

Research at the intersection of Intelligent User Interfaces (IUI) and health has seen significant growth in the past five years, reflecting a concerted effort to harness artificial intelligence (AI) and user-centered design principles to address complex health challenges.

This surge in interest is evident in the increasing number of health-related papers presented at the ACM IUI conference, showcasing innovative approaches to personalized interventions, assistive technologies, mental health support and AI-driven clinical decision support systems. This section reviews just a few of the popular topics.

A popular area of research is personalized and adaptive technologies for health. For example, Schaefer and Willemsen [10] introduced a system for tailoring nutritional goals to individual users using Rasch-based models. Coppens et al. [2] conducted a randomized controlled trial that examined how personalized activity and tip recommendations can motivate people to increase their physical activity levels. These studies highlight the potential of IUIs to enhance user engagement and promote healthy behaviors through personalization.

Assistive technologies have also been a critical component of health IUIs. Nazari et al. [8] developed an augmented reality (AR) communication system personalized for non-speaking autistic users, demonstrating how AR can facilitate communication for individuals with communication impairments. Lee et al. [5] presented a method to assess the quality of stroke rehabilitation exercises using machine learning and wearable sensors, emphasizing the role of IUIs in supporting rehabilitation.

In the realm of AI and clinical decision support, Yang et al. [15] proposed a human-AI collaborative system to assist pathologists in mitosis assessment, enhancing diagnostic accuracy through intelligent interfaces. Bhattacharya et al. [1] introduced directive data-centric explanations to support the monitoring of the risk of diabetes onset, enabling users to engage in what-if explorations and better understand their health data.

Mental health support via IUIs is another growing field. Vossen et al. [14] investigated the effects of personalizing a psychotherapy conversational agent on the therapeutic bond and users' intentions to continue using the agent, finding that personalization can positively impact user engagement. She et al. [11] developed a peer-based support system called Peer2S to enhance mental well-being among students during COVID-19 lockdowns, showcasing the potential of IUIs in fostering social support networks.

These advancements underscore the need for a dedicated forum to address the unique challenges associated with health IUIs. The complexity of health contexts, the necessity for long-term user engagement, and the critical importance of trust and ethical considerations in AI-driven health systems highlight gaps not fully addressed within the general scope of existing conferences.

3 Workshop Format

HealthIUI 2025 is organized as a half-day workshop, held in conjunction with the 30th ACM IUI conference. The workshop is designed to foster interdisciplinary discussions and collaboration among researchers and practitioners in the fields of intelligent user interfaces, AI, and health and care. The workshop begins with an invited keynote presentation from an expert in the field, providing insights into current challenges and advancements in AI-driven health interfaces. This is followed by paper presentations, divided into long (20 min+10 min discussion) and short talks (15 min + 5 min discussion) and poster presentations (5 min +5 min discussion),

covering diverse research topics related to the workshop. To encourage interaction and engagement, dedicated discussion sessions follow each presentation, allowing participants to provide feedback, exchange ideas, and explore potential collaborations. Additionally, the workshop includes a concluding discussion, where attendees reflect on key takeaways, identify emerging research directions, and discuss opportunities for future interdisciplinary research.

4 Selection Process

We invited submissions for research papers (16 pages), short papers (8 pages), and research or project-focused submissions, as well as opinion pieces. All submissions went through a peer-reviewing process, with each submission receiving at least three reviews. Outstanding submissions were then invited for presentation at the workshop as either long, short, or poster presentations.

5 Workshop Themes and Topics

The selected papers in this workshop highlight critical research areas, reflecting the diverse applications of IUIs in healthcare. This section presents the primary themes emerging from accepted contributions, ensuring alignment with the assigned categories of AI-assisted health information access, clinical decision support, and mental health interventions, showcasing how AI and IUIs can support health information access, clinical decision-making, and mental health interventions.

5.1 AI-Assisted Health Information Access

With the increasing integration of generative AI and language models into healthcare applications, understanding their role in improving health information retrieval is crucial. Research in this theme explores how AI-driven systems can support patients and caregivers in accessing reliable and personalized health information while addressing concerns related to transparency, accuracy, and trust. One study [12] investigates how generative AI can be used to enhance patient and caregiver access to reliable health information, focusing on improving transparency, trust, and user comprehension in AI-generated medical content. The goal is to assist patients and caregivers in navigating complex medical information, ensuring that AI-generated content is both accessible and trustworthy. Another contribution [13] examines methods for improving the interpretability of AI-driven health information, ensuring that users receive comprehensible and actionable insights.

5.2 AI-Powered Clinical Decision Support

AI-driven interfaces are increasingly used to assist healthcare professionals in diagnostic and treatment course decision-making. Research under this theme focuses on the design of decision-support systems that provide clinicians with clear, interpretable AI recommendations while aligning with clinical best practices. Another study [7] explores how AI can enhance decision-making processes in mental health applications, focusing on therapy visualization and AI-generated arts rather than traditional clinical decision support. This paper emphasizes on the importance of integrating explainability features to build clinician trust, in complex medical conditions.

5.3 Mental Health and Therapeutic Support

Mental health and therapy applications stand to benefit significantly from advancements in AI-driven UIs. Research in this theme examines how explainable AI and adaptive visualizations can enhance user engagement in mental health interventions. One paper [3] explores the impact of an AI-powered assistant for therapists in chat-based psychological interventions, focusing on how AI-driven dialogue systems can enhance the therapeutic process and patient engagement. One study [7] introduces a novel approach to therapy visualization that employs AI-generated arts and topic modeling to support therapy session analysis. These contributions highlight the potential for UIs to augment traditional therapeutic methods while ensuring accessibility and user confidence in AI-driven interventions.

6 Workshop Contributions

This section presents the research contributions accepted for the workshop, categorized into full-length papers, short papers, and research notes. The workshop received 15 submissions, of which 7 were accepted, resulting in an acceptance rate of approximately 0.46. Each submission received three to four reviews. The majority of submissions came from Germany, the United States, and Austria, reflecting strong international interest in the topic. Each contribution explores different aspects of intelligent user interfaces in healthcare, ranging from AI-assisted health information access to clinical decision support and mental health applications. Below, we summarize the key findings and innovations from each paper.

6.1 Full-Length Papers

AI-Supported Health Information Needs. One paper [12] investigates the role of generative AI in supporting patients' and caregivers' informational needs, analyzing how AI-generated content can facilitate decision-making and knowledge acquisition. This research highlights the challenges of ensuring AI-generated health information is reliable, transparent, and useful for a diverse range of users.

Health Visualization in the Workplace. Another study [9] presents a screensaver-based system designed to visualize health status in workplace environments. By integrating health data into everyday digital interactions, the system aims to reduce presenteeism and promote well-being, offering a novel approach to workplace health monitoring.

AI-Powered Therapy Assistance. A third contribution [3] focuses on an AI-powered assistant for therapists, assessing user perceptions and engagement in chat-based psychological interventions. The study examines how AI can support therapists by providing timely insights, summarization tools, and conversational prompts to enhance patient interactions.

6.2 Short Papers

Adaptive Visualization for Consumer Health Information. One short paper [13] introduces a user-centric adaptation model for document visualizations within consumer health information systems. This study explores how personalization techniques can enhance

accessibility and usability, particularly for individuals with varying levels of health literacy.

AI-Driven Clinical Decision Support for Retinal Disease. Another short paper [6] explores an AI-driven decision support tool for retinal disease treatment. The research emphasizes the potential of intelligent interfaces in specialized clinical applications, where AI can assist in diagnosing and managing vision-related conditions while maintaining clinician trust.

6.3 Research Notes

Research notes in the workshop include exploratory work on explainable AI solutions for nursing care [4] and therapy visualization tools [7]. These studies emphasize the importance of designing transparent AI models that align with healthcare professionals' needs while enhancing interpretability in clinical and therapeutic settings.

7 Conclusion and Future Directions

The HealthUI workshop at ACM IUI 2025 underscores the growing importance of user-centered AI in healthcare applications. Discussions from this workshop will contribute to ongoing efforts to refine the design of intelligent health interfaces, ensuring that they remain transparent, adaptable, and ethically responsible. Future research directions identified through this workshop include the development of improved explainability techniques in AI-assisted decision-making, strategies for sustaining long-term user engagement, and methods for making AI-driven health technologies more inclusive and accessible. By fostering collaboration among researchers from diverse fields, HealthUI aims to shape the next generation of intelligent health interfaces that effectively integrate AI while prioritizing user needs.

8 Program Committee

- Aditya Bhattacharya (KU Leuven)
- Alain D. Starke (University of Amsterdam)
- Bart Knijnenburg (Clemson University)
- Federica Cena (University of Torino)
- Hanna Hauptmann (Utrecht University)
- Matthew Jörke (Stanford University)
- Maxwell Szymanski (KU Leuven)
- Min Lee (SMU)
- Shatha Degachi (Delft University of Technology)

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