

Pervasive Informatics for Healthcare



The sophisticated capabilities of smartphones integrating diverse sensors along with wearable and non-wearable sensors provide an opportunity to collect longitudinal, multimodal data streams and facilitate near real-time monitoring. Moreover, these devices are becoming increasingly affordable and have already been embraced by many people, thus enabling large scale investigations and clinical trials. The data collected from these ubiquitous devices, combined with emerging advances in data science and machine learning, offer unprecedented opportunities for transforming healthcare.

These *pervasive informatics technologies* are revolutionizing how we collect, share, and build services around data about our lives. The research interest in these technologies has grown exponentially over the years, demonstrating enormous potential for diverse healthcare applications such as fitness tracking, wellness monitoring, home and in-hospital monitoring, and clinical decision support systems. In addition to these opportunities, the rapid advancement of technology brings forth a myriad of practical and social challenges that must be addressed. These challenges encompass areas such as data protection and privacy, the empowerment of individuals in making informed decisions about their health, the widening gap in digital and health inequalities, the implementation of these technologies on a large scale, and the necessity for robustness and trust in their effectiveness. Furthermore, it is

imperative to consider the associated liabilities as well as legal and regulatory considerations that arise from the utilization of these technologies.

This Special Issue aims to highlight advances in all aspects of pervasive informatics for healthcare, including developments in novel sensor data processing, innovative data analytics approaches in biomedical applications, realization of human digital twins, innovative services and digital therapeutics, considering both established and emerging tools from the viewpoints of technical, user and social aspects.

This Special Issue will focus on pervasive informatics for healthcare to provide a forum to report on state of the art technical, user and social developments and implications, following the organization of the 2023 EAI PervasiveHealth conference (<https://pervasivehealth.eai-conferences.org/2023/>). We invite extensions of some of the best works presented at the conference (authors need to ensure there is at least 75% new content compared to the conference paper), along with papers submitted within the open call taking also into account the target audience of the JBHI journal. Prospective authors are encouraged to contact the Guest Editors in advance.

Topics of interest include, but are not limited to, the following:

- Sensing/Actuating Technologies and Pervasive Computing
- Sensor-based Decision Support Systems
- Human-Computer Interaction and User Experience
- Human-AI interaction design in the context of pervasive informatics
- Identification and Addressing of Stakeholders' Needs, Usability and Acceptability
- Barriers and Enablers to Adoption of New Technologies and Care Models
- Social Implications of Pervasive Health Technology
- Patient and Caregiver Empowerment
- Digital Interventions and Health Behavior Change
- Autonomous Systems to Support Independent Living
- Clinical Validation and Evaluation Studies
- Home-based Healthcare (Telemedicine, Telemonitoring, mHealth) and Wellness Measurement and Promotion
- Smart Homes and their link to healthcare and wellbeing
- Activity Recognition and Fall Detection
- Security, Privacy, Safety, and other Regulatory Aspects
- Education and Training of Patients and Healthcare Professionals
- Fitting pervasive informatics solutions into reimbursement models, reporting on value-based healthcare experiences

Guest Editors

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Key Dates

Deadline for Submission:

1 June, 2024

First Reviews Due:

5 July, 2024

Revised Manuscript Due:

7 August, 2024

Final Decision:

30 September, 2024