



Call for Papers for a Special Issue on Wearable IoT Devices for Reliable Mobile Health Applications

Aim and Scope

Wearable Internet of Things (IoT) technology has the potential to transform the quality of human life by enabling cost-effective, reliable, continuous, and data-driven monitoring of users in a free-living environment. For example, wearable devices have been identified as a key technology to support the aging populations across the world. Despite the impressive potential of wearable technology, their widespread adoption in both clinical and everyday settings have been limited due to several technology, usability, and energy sustainability challenges. This has led to multiple organizations, including the Movement Disorders Society Technology Study Group, stating that solving these challenges is crucial to improve the adoption of wearable devices. Some of the key challenges to wider adoption of wearable IoT technology include energy limitations, sensor data shift, privacy, and security. Reliability and in-situ ageing management in IoT devices is another crucial issue for wider adoption these devices. This is especially true for IoT devices deployed in remote locations where maintenance is expensive and time consuming. The goal of this special issue is to highlight recent research in wearable IoT devices that aims to address the above challenges. Articles in this special issue will focus on hardware, software, design optimization, reliability, testing, and privacy aspects of wearable IoT devices. We will also consider approaches that co-optimize the operation of wearable devices for a specific set of applications (e.g., movement disorders). Overall, the aim of this issue is to generate a body of work in design of wearable devices and their integration into the IoT, which will further catalyze research and adoption of wearable IoT technology.

Topics of Interest

This special issue is dedicated to wearable IoT devices for reliable health applications. It aims to cover diverse aspects of theory, practice, experiences, and open challenges related to wearable IoT systems. The scope spans the entire wearable health domain from sensors, applications, energy management algorithms, security, privacy, reliability, design optimization, missing data in sensors, and ageing management.

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| <ul style="list-style-type: none">• Mobile health applications• Design optimization for wearable devices• Methods to handle sensor data disturbances• Missing data detection, imputation, and recovery | <ul style="list-style-type: none">• Energy efficiency and quality of service optimization• Privacy preserving mobile health applications• Application-specific wearable IoT devices• Reliability management and ageing in IoT devices |
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Submission Guidelines

Prospective authors should follow the submission guidelines for IEEE Design & Test. All manuscripts must be submitted electronically to IEEE Manuscript Central at <https://mc.manuscriptcentral.com/dandt>. Indicate that you are submitting your article to the “*Special Issue on Wearable IoT Devices for Reliable Mobile Health Applications*”. Manuscripts must not exceed 5,000 words, including figures (with each average-size figure counting as 200 words) and a maximum of 12 references (30 for surveys). This amounts to about 4,000 words of text and a maximum of five small to medium figures. Accepted articles will be edited for clarity, structure, conciseness, grammar, passive to active voice, logical organization, readability, and adherence to style. Please see IEEE Design & Test Author Information at: <https://ieeecedata.org/publication/ieee-design-test-dt/author-info>.

Schedule

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| <ul style="list-style-type: none">• Open for submissions : September 1, 2023• Submission deadline : February 1, 2024• Notification First Round : April 15, 2024 | <ul style="list-style-type: none">• Revision submission : April 30, 2024• Final decisions : June 15, 2024• Tentative publication : Fall 2024 |
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Guest Editors

- **Ganapati Bhat**, Washington State University, USA
- **Pietro Mercati**, Intel Labs, USA

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