

Proposal for Editing a Special Issue of the International Journal of Wireless Information Networks

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Editor-in-Chief	Kaveh Pahlavan (kaveh@ece.wpi.edu)
Scope	<p>The topics of interest for the special issue include, but are not limited to:</p> <ul style="list-style-type: none"> ◆ Artificial Intelligence (AI) for personal data transmission scheme in Personal IoT ◆ Artificial Intelligence (AI) for wireless-glued architectures in Personal IoT ◆ Artificial Intelligence (AI) for ubiquitous smart networking in Personal IoT ◆ Artificial Intelligence (AI) for ubiquitous data analysis in Personal IoT ◆ Ubiquitous data collection in Personal IoT ◆ Intelligent upgrading system architecture for Personal IoT ◆ AI-driven smart generation model for Personal IoT ◆ Approximation inference scheme for Personal IoT ◆ Intelligent ubiquitous data mining in heterogeneous Personal IoT
Title of the Special Issue	AI-Driven Smart Networking and Communication for Personal Internet of Things
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Scope / Call for Papers

With the rapid development of personal computing and production technology of Intelligent devices, the Internet of Things (IoT) industry has reached new levels for consumers. The deep fusion of smart wireless personal communication platforms, lower cost quick and smart data sensing and transmission, as well as heterogeneous devices networking have fueled the growth of IoT in the home, transportation, and personal devices to the connected home, office, hospital and cars, etc. We have the personal wearable devices, sensors in the home/office/hospital, which are comfort, efficiency, and convenience. Additionally, sensor technologies are influencing the safety, comfort and efficiency of vehicles on the road. There have been the Product Resources such as the accelerometer insights, humidity sensor design insights, wireless Pressure / Temperature / Humidity Demo Kits, and so on.

Compared with the traditional IoT, Personal IoT integrates various kinds of ubiquitous networking and communication, including acquisition, control sensors or controllers with perception and monitoring capabilities, as well as mobile communications, intelligent analysis and other technologies into all aspects of industrial production process. It is well known that, obtaining data and analyzing data is the core task for Personal IoT. However, how to guarantee the real-time, automation, embedded, security of personal data process has been the key issue of Personal IoT. Fortunately, the Artificial Intelligence (AI) could be used to address the above problems through the wireless-glued architectures. The Artificial Intelligence (AI) could be done on the server/cloud node while personal data would be gathered at runtime from the deployed personal smart devices. Then, the Personal IoT distributed system would be upgraded by using the inference ubiquitous smart networks of Artificial Intelligence (AI). After AI-driven training and inference, the Personal IoT would greatly enable increases in personal efficiency and improvement.

Nowadays, Artificial Intelligence (AI) facilitates ubiquitous smart networking and communication, application analysis and prediction, and thus to make an optimal decision. The basic idea is to leverage a multitude of collaborative ubiquitous personal smart devices and near-user infrastructures to carry out a substantial amount of personal data retrieval, recognition, compression, and communication tasks, enabling low latency, energy efficiency, and wireless power transfer of Personal IoT. Despite the many benefits and opportunities Artificial Intelligence (AI) offers, there are several research and technical challenges that need attention from the research community. Some of these challenges include: how to design an efficient Artificial Intelligence (AI) based Personal IoT framework, how to make Personal IoT systems more intelligent, how to achieve the efficient data processing and distribution with Artificial Intelligence (AI), challenge about the low-cost smart sensing of complex personal scenes, challenge about the ubiquitous smart networking and communications, etc. We hope to incorporate artificial intelligence and smart sensing / networking / communication algorithms into Personal IoT, aimed at make the systems smart, intelligent, and efficient.

The topics of interest for the special issue include, but are not limited to:

- ◆ Artificial Intelligence (AI) for personal data transmission scheme in Personal IoT
- ◆ Artificial Intelligence (AI) for wireless-glued architectures in Personal IoT
- ◆ Artificial Intelligence (AI) for ubiquitous smart networking in Personal IoT
- ◆ Artificial Intelligence (AI) for ubiquitous data analysis in Personal IoT
- ◆ Ubiquitous data collection in Personal IoT
- ◆ Intelligent upgrading system architecture for Personal IoT
- ◆ AI-driven smart generation model for Personal IoT
- ◆ Approximation inference scheme for Personal IoT
- ◆ Intelligent ubiquitous data mining in heterogeneous Personal IoT

Contribution Process

The contribution to this special issue will be based on open call. Some well-known experts in this field may also be invited to submit a paper to this special issue. The goal is to attract high quality contributions that collectively provide a comprehensive coverage of the subjects pertaining to AI- Driven PIOT technology and applications. All submitted manuscripts will undergo thorough reviews to ensure quality and coverage

Review Process / Quality Control of Contributions

A thorough review process will be employed to ensure comprehensive reviews of the papers and ultimate selection of the best and most representative contributions. Each received paper will be subject to 2-3 independent reviews. Moreover, the guest editors will ensure that the timeline set for the review process is strictly adhered to.

The guest editors will address any conventional or specialized requirements imposed by the editor-in-chief and/or the publisher. The intention is to fully conform to the high-quality standards of the journal.

Suggested Important Dates

Invitation to authors: March 31, 2019

Deadline for submissions: August 31, 2019

Author(s) notification of acceptance: October 30, 2019

Final version submission: December 30, 2019

Publication of the special issue: in 2019 or 2020



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