

"Emerging Trends Issues and Challenges in Edge Artificial Intelligence"

Theme: Internet of Things (IoT) has been emerging for the mobile devices and sensors growing explosively. However, the cloud computing can't provide real time services. Therefore, edge computing is proposed as a new paradigm for reducing latency, placing small data center at the edge of the Internet, more close to the end devices. Terms such as "edge", "cloudlets", and "micro data centers" have been used in the literature to refer to these small, edge-located data centers. Edge computing has the advantage of less latency, which decreases the demand on processing/storage capabilities, battery life, network bandwidth for the end devices in the IoT. The edge computing places computing/storage resources and services closer to the end users, such as placing image processing services in the edge node for preprocessing images to reduce communications through network, in this way, latency can be optimized.

Moreover, the artificial intelligence (AI) is popular, which simplify all of us. Although AI is based on powerful computing, which help us diagnose on diseases, identify targets with more accuracy, and so on. With the more and more powerful of edge, the AI can be fused into edge to extend its application range. And currently, there are many applications of edge AI, such as smart camera, which can detect and track specific person, intelligent sound box, and so on.

The need for edge artificial intelligence has been recognized during the last few years by our research communities. However, many challenges still remain to be addressed. This special session is intended to encourage high-quality research in edge artificial intelligence, and push the theoretical and practical bound forward for a deeper understanding in fundamental architectures, operating systems, applications, new services/toolkits, and business supports from academics and industry viewpoints. Authors from both academia and industry are invited to submit papers presenting new research related to the theory or practice of edge artificial intelligence, including algorithms, modeling, technologies and applications. The topics suggested can be discussed in terms of concepts, the state of the art, standards, implementations and evaluation, and running experiments and/or applications.

Topics include, but are not limited to, the following research topics and technologies:

- Applications/services for edge artificial intelligence
- Algorithm for edge artificial intelligence
- Internet of Things (IoT) services with edge artificial intelligence
- Security for edge artificial intelligence
- Architecture for edge artificial intelligence
- New operating system for edge artificial intelligence
- Resource management for edge artificial intelligence
- Toolkits for edge artificial intelligence
- 5G-enabled services
- Software defined networking (SDN) for artificial intelligence

Manuscript Preparation and Submission

Follow the guidelines in "Information for Authors" in the IEEE- IES website: <http://www.ieee-ies.org/pubs/transactions-on-industrial-informatics> . Please submit your manuscript in electronic form through Manuscript Central web site: <https://mc.manuscriptcentral.com/tii> . On the submitting page #1 in popup menu of manuscript type, select: SS on **Emerging Trends Issues and Challenges in Edge Artificial Intelligence**.

Submissions to this Special Section must represent original material that has been neither submitted to, nor published in, any other journal. Regular manuscript length is 8 pages.

Note: The recommended papers for the section are subject to final approval by the Editor-in-Chief. Some papers may be published outside the special section, at the EIC discretion.

Timetable: **Deadline for manuscript submissions** **November 30, 2018**
 Expected publication date (tentative) **July 2019**

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