# Call for Papers

Themed Series of APSIPA Trans. on Signal and Information Processing on
## "Emerging AI Technologies for Smart Infrastructure"

Rapid urbanization presents new challenges to existing physical and digital infrastructure. New infrastructure development is needed in response to rapid population growth and intense economic activities. The emerging research on smart cities offers part of the solution to the challenges, and facilitates the collection of environmental data through the Internet of Things (IoT). Billions of sensors and devices are deployed to collect, process and transmit data and receive feedback after analysis. However, transmitting an enormous amount of data, perceiving complex environment, and making smart decisions in a timely manner is a very demanding task. Recent advances in AI technologies can significantly contribute and provide cost-effective solutions to the smart infrastructure of modern metropolitans.

Since smart infrastructure is a system that can monitor, communicate, analyze and act based on data collected by sensors, challenges exist in many aspects. At present, intelligent sensors are still a dynamic, open and evolving concept. Though the new generation communication technique is developing leaps and bounds, more efficient approaches are in need to make the paradigm faster, greener, and safer. Besides, breakthroughs in various analytic solutions powered by AI are expected to inject vitality into innovations and applications in smart infrastructure. This themed series aims to provide a venue for researchers and practitioners in related fields, to communicate and share ideas and achievements of enabling AI technologies for smart infrastructure. Research topics of interest include but are not limited to:

- Smart sensors:
    - Sensors with intelligent video coding
    - Fusion of homogenous and/or heterogeneous data
    - Multi-modal sensing
    - Sensors with embedded efficient image enhancement
    - Management of data uncertainty coming from noisy, missing and conflicting data
    - Sensors with low-power or self-power
    - Novel design for wearable sensors
    - RGB-D sensors and 3D reconstruction

- Smart communication:
    - Trust, security, and privacy in wireless networks
    - Networks in Internet of Things (IoT)
    - Mobile networks – 5G, 6G and beyond
    - Artificial intelligence in networking resource optimizations
    - Wireless network architectures
    - Data storage, data centers and cloud computing
    - High performance networks

- Smart analytics:
    - Machine learning algorithms for sensing data analytics
    - Deep learning for big data
    - Distributed algorithms for big data
    - Computer vision for smart infrastructure
    - Natural language processing for smart infrastructure
    - Multi-modal data analytics

- Applications for smart infrastructure:
    - Structural health monitoring
    - Intelligent transportation systems
    - Smart surveillance with sensor-activated cameras and analytic tools
    - Smart home energy monitor systems
    - Integrated ecosystem for smart cities

Each paper submitted to this series will be reviewed with the first-come-first-serve principle. The first round of decision targets at 4 weeks. Each paper will be published as an open access article immediately after its acceptance. Once all papers in this series are published, they will be assembled into an online book with an editorial written by the guest editorial team. If a paper cannot be accepted within the publication window, it will be changed to a regular paper. If you are interested in paper submission, please refer to: https://www.nowpublishers.com/SIP.

Submission Window: Sep. 5, 2021 to Feb. 28, 2022

Publication Window: Oct. 1, 2021 to Apr. 30, 2022

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