CALL FOR PAPERS
for Special Section on
AI-Enabled Threat Intelligence and Hunting Microservices for Distributed Industrial IoT System

Theme: The emerging Industrial Internet of Things (IIoT), such as automated factories, smart cities and smart healthcare systems, enables the interconnection of automation and data analytics across industrial technologies, including Cyber-Physical Systems (CPS), Internet of Things (IoT), cloud and edge, and fog computing paradigms. IIoT systems generate a huge amount of data which requires significant effort to process them at cloud centres. Reliable data transfer and secure data analytics at the edge of a network have become significant open issues. Existing paradigms, such as osmotic computing and federated learning, have attempted to integrate orchestrated IoT services and employ Artificial Intelligence (AI) technologies for further secure analytics at distributed IIoT systems and networks.

There are also microservice solutions at the cloud, such as Docker Swarm, OpenStack Magnum and Kubernetes, which manually decompose applications, manage and deploy a set of services to applications. Service and microservice orchestration techniques and approaches have been independently employed in the cloud, fog, and edge and IoT. However, there are no standard architecture and/or models the offer AI-enabled threat intelligence and hunting microservices orchestration in distributed IIoT systems and networks. Existing service orchestration and microservice approaches, methods and frameworks have challenges related to flexibility, security and privacy of distributed IIoT systems and networks, which do not enable the automation of the service orchestration management in a federated environment of the IoT, Industrial IoT (IIoT), edge, fog or cloud layers.

This special section will focus on (but not limited to) the following topics:
- AI-enabled threat intelligence microservices in IIoT networks/systems;
- AI-based threat hunting microservices in IIoT networks/systems;
- AI-enabled deception microservices in IIoT networks/systems;
- Deep learning microservices for defence applications in IIoT networks/systems;
- AI-based Anomaly detection microservices in IIoT networks/systems;
- AI-enabled digital forensics microservices at IIoT networks;
- Optimization microservices for security and privacy trade-offs in IIoT networks/systems;
- AI-enabled vulnerability detection or analysis microservices in IIoT networks/systems
- Secure data pre-processing microservices in IIoT networks/systems;
- Secure elasticsearch and indexing microservices in IIoT networks/systems;
- AI-enabled privacy-preserving microservices in IIoT networks/systems;
- AI-based risk analysis microservices in IIoT networks/systems

Manuscript Preparation and Submission
Follow the guidelines in “Information for Authors” in the IEEE Transaction on Industrial Informatics 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 AI-Enabled Threat Intelligence and Hunting Microservices for Distributed Industrial IoT System

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 February 25, 2021
Expected publication date (tentative) October 2021

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