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IEEE Transactions on Emerging Topics in Computational Intelligence

Special Issue on Privacy and Security in Computational Intelligence

I. Aim and Scope

The advance in the state-of-the-art computing paradigms and infrastructure such as cloud computing, Internet of Things (IoT) and their fusion fog computing, has enabled a variety of large-scale applications where big data are collected, transmitted, stored, processed and mined. Unlocking the value of the data plays the key role in the data lifecycle. Computational intelligence (CI) technologies are an effective and important way to extract the intelligence and knowledge from datasets for data-driven decision-makings. Given that CI methods are usually both data- and computation-intensive, leveraging the large-scale computing paradigms and infrastructure empowers CI methods to handle data at a very large scale for deeper or personalized intelligence and insights. A typical example is the recent boom of deep learning research which is significantly enhanced by the development of massive computational power.

However, the characteristics of the state-of-the-art computing paradigms and infrastructural platforms, such as ubiquitous access and multi-tenancy, pose unprecedented privacy and security threats on the computing infrastructure for CI and the application of CI in real problems, rendering users more vulnerable to privacy leakage and security attacks. It is necessary to keep privacy and security concerns in mind when implementing hardware (e.g., Intel's neural networks processor instructions) and platforms for CI, designing CI algorithms, and deploying CI applications. Hence, it is the high time to investigate the privacy and security issues related to CI in the era of big data and cloud/fog computing.

This special issue aims to present the most recent advances in the privacy and security research related to CI, particularly in (1) secure and privacy hardware and platforms to support CI technologies, (2) innovative secure and privacy CI algorithms for data mining and knowledge discovery, as well as (3) novel CI methods that strengthen privacy and security technologies.

II. TOPICS

Potential topics of interest for this special issue include, but are not limited to:

- Secure and large-scale systems and platforms supporting computational intelligence paradigms
- Privacy-preserving and anonymization technologies for computational intelligence
- Secure and private computational intelligence algorithm design and analysis
- Computational intelligence paradigm implementation across private/public computing systems/platforms
- Information security and privacy theories from computational intelligence perspectives
- Computational intelligence techniques for cyberspace intrusion detection systems
- Computational intelligence for digital forensics
- Computational intelligence for risk management
- Computational intelligence for data-driven cyberspace security and information privacy
- Real-world applications of computational intelligence for privacy and security

III. Submissions

Manuscripts should be prepared according to the "Information for Authors" section of the journal (http://cis.ieee.org/ieee-transactions-on-emerging-topics-in-computational-intelligence.html) and submissions should be done through the journal submission website: https://mc.manuscriptcentral.com/tetci-ieee, by selecting the Manuscript Type of "Privacy and Security in Computational Intelligence" and clearly marking "Privacy and Security in Computational Intelligence Special Issue Paper" as comments to the Editor-in-Chief. Submitted papers will be reviewed by at least three different reviewers. Submission of a manuscript implies that it is the authors' original unpublished work and is not being submitted for possible publication elsewhere.

IV. Important Date

- Paper submission deadline: February 03, 2019 (extended)
- Notice of the 1st round review results: March 01, 2019
- Revision due: May 31, 2019
- Final notice of acceptance/reject: August 30, 2019

V. Guest Editors

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