ADSN 2021 Program

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Oct. 25 (Calgary time)
18:00 Section 3
Session 3A DASC-ADSN
Session chair: LiHui Deng, Univerity of Electronic Science and Technology of China, China

Authors Paper Title Paper ID
Mohaddaseh Nikseresht, Brent De Blaere, Jens Vankeirsbilck, Davy Pissoort, Jeroen Boydens
Impact of Selective Implementation on Soft Error Detection Through Low-level Re-execution,

Chen Cheng, Yukikazu Nakamoto
Applying Neural Networks for Plant Model Simulation in Embedded Control System

Tatsuki Yamazaki, Tomoyuki Ohta
A MANET-based Building Evacuation System Considering User Characteristics

19:00-21:00 ADSN-Invited Speech
1. Trustable Outsourced Computation using Smart Contracts
Rei Safavi-Naini (University of Calgary)

2. Security issues on 5G network
Toshiaki Tanaka (University of Hyogo)

3. Cluster Structure of Online User Opinions Generated by Interactions between Fake News and Their Corrections
Masaki Aida (Tokyo Metropolitan University), Ayako Hashizume (Hosei University)

Keynote / Invited speeches

Keynote speech
Trustable Outsourced Computation using Smart Contracts
Rei Safavi-Naini (University of Calgary)

Outsourcing computation is increasingly used by weak clients to expand their computational power when it is needed. It however poses a fundamental question: how can the results of the outsourced computation be trusted? We give an overview of approaches to providing trustable outsourced computation results, and show how to design a smart contract based service that uses replicated computation and has provable correctness guarantee.

Invited speech
Security issues on 5G network
Toshiaki Tanaka (University of Hyogo)

Currently 5G services have started in many countries and being widely penetrated into our daily life. On the 5G network, variety of promising services such as Industrial-IoT, Telemedicine, Tele-existence, Autonomous driving, and Smart cities are considered. From the technological viewpoints, 5G network is based on open technology and softwarization of core network in addition to new radio technology. Although 5G network being developed in “security-by-designed” principle, there are still some concerns. In this talk, we discuss three topics on 5G network security. First, we discuss potential loopholes, that has been identified in 3G/4G network, may affect 5G network. Second, we introduce new security features based on 5G network architecture. Third, we discuss security requirements for concrete use cases to provide secure and reliable services over 5G network.

Invited speech
Cluster Structure of Online User Opinions Generated by Interactions between Fake News and Their Corrections
Masaki Aida (Tokyo Metropolitan University), Ayako Hashizume (Hosei University)

The problem of fake news has been becoming more severe on today's online social networks.

Intuitively, it seems adequate to spread their correction as a countermeasure. However, there is an actual case that the correction ironically causes to attract attention to fake news, and then the situation worsened. In this talk, we discuss the interaction between fake news and its corrected information as a reaction-diffusion system and show a framework that describes the mechanism that the correction causes to attract attention to fake news. In this framework, the emergence of clusters of users who believe in fake news is understood as the Turing pattern that appears in the activator-inhibitor model. Numerical calculations show that even if the network structure has no spatial bias, the interaction between fake news and their correction generates user clusters that strongly discuss fake news.