

Special Session Proposal for IEEE-CICS 2018

Topic: Computational Intelligence for Intrusion Detection

Organizations across the world prefer to install Intrusion Detection System to protect their private network from external intrusions. An Intrusion Detection System is a security system that protects the computer systems and networks for possible intrusions from outside the organizations. The potential vulnerabilities in an organization can be handled by IDS which is programmed to analyze traffic and identify patterns which may be an indication of cyber attacks and threats. Top Worst Intrusions are: Social engineering and complacency, Phishing, Watering-hole, socially engineered malware, Password phishing attacks, Unpatched software, Social media threats and Advanced Persistent Threats (APT). An IDS has a Management console, sensors and data base of attack signatures. Today IDS operations are mostly automated. Potential malicious activities can be recognized using intelligent mechanisms. Next Generation Intrusion Detection Systems are intelligent systems. Computational Intelligence refers to the ability of a computer to learn a specific task from data or experimental observation. They are nature inspired computational methods to address the complex real world problems. Hence the scope of application of Computational Intelligent Methods to detect intrusions through lot of understanding and challenges for further research.

This session proposes to cover all the types of intrusions, attacks and threats, research challenges in detecting intrusions, limitations of the existing approaches, improved methods of detection based on Computational Intelligence methods. The topics covered are, but not limited to:

- Attack handling on Cyber Physical Systems.
- Computational Intelligence for handling APTs.
- Attacks in Machine-to-Machine Communications.
- Threats to UAV Networks.
- Security Framework for Malware Intrusions.
- Authentication using Key Stroke Dynamics.
- Artificial Immune System for wireless sensor network intrusions.
- Mobile Device Security against Malware Attacks.

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