Title of Special Session: Computational Intelligence in Cyber Security (CICS)


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Introduction to the special session:

Computational Intelligence constitutes an umbrella of techniques, has proven to be flexible in decision making in dynamic environment. These techniques typically include Fuzzy Logic, Evolutionary Computation, Neural Networks and other similar computational models. The use of these techniques allowed building efficient online monitoring tools and robust decision support modules, providing cross-linking solutions to different cyber security applications.

In order to protect Internet users from Identity Theft, Phishing, Spam and other cyber infrastructure threats, we need flexible, adaptable and robust cyber defence systems, which can make intelligent decisions (in near real-time) in detecting wide variety of threats and attacks, including active and passive attacks, external attacks and internal misuses, known and unknown attacks, viruses and spam, etc. Computational Intelligent (CI) based techniques appear to be promising to enhance cyber security measures, and have been increasingly applied in the area of information security and information assurance. Moreover, the multi-faceted CI approaches appear to provide a new security paradigm to deal with influx of new threats in a large network of computers.

This special session will cover all the issues, research and development of the state-of-the-art CI-based technologies in solving various computer and information security problems. CI application areas include, but are not limited to:

- information assurance, cyber fraud and crime detection
- security of storage systems, operating systems, and networks
- intrusion detection, prediction, classification, and response
- models for survivable, resilient, and self-healing systems
- sensor network security, web security, wireless security
- digital forensics, security information visualization
- sensor fusion and decision support in computer security
- Security applications and cyber infrastructure protection

Keywords


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