SecDef Workshop Chairs' Welcome

It is our great pleasure to welcome you to the *2016 Workshop on Genetic and Evolutionary Computation in Defense, Security, and Risk Management (SecDef'16)*. With the constant appearance of new threats, research in the areas of defense, security and risk management has acquired an increasing importance over the past few years. These new challenges often require innovative solutions and Computational Intelligence techniques can play a significant role in finding them. The workshop encouraged the submission of papers describing both theoretical developments and applications of Genetic and Evolutionary Computation and their hybrids to the following (and other related) topics:

- Cyber-crime and cyber-defense : anomaly detection systems, attack prevention and defense, threat forecasting systems, anti-spam, antivirus systems, cyber warfare, cyber fraud
- IT Security: Intrusion detection, behavior monitoring, network traffic analysis
- Corporate security, with special focus on BYOD policies and usability of security
- Risk management: identification, prevention, monitoring and handling of risks, risk impact and probability estimation systems, contingency plans, real time risk management
- Critical Infrastructure Protection (CIP)
- Advanced Persistent Threats (APTs)
- Design of military systems and sub-systems.
- Logistics and scheduling of military operations.
- Strategic planning and tactical decision making.
- Multi-objective techniques for examining tradeoffs in military, security, and counter-terrorism procedures.
- Automated discovery of tactics and procedures for site security, force protection, and consequence management.
- Other computational intelligence techniques for applications in the areas listed above.

The workshop invited completed or ongoing work, with the aim to encourage communication between active researchers and practitioners to better understand the current scope of efforts within this domain. The ultimate goal is to understand, discuss, and help set future directions for computational intelligence in security and defense problems.

Now in its third year, the workshop will feature five presentations from researchers across North America and Europe:

- *Soft-Data-Driven Response Generation for Maritime Domain Awareness* by Alex Plachkov (University of Ottawa); Rafael Falcon (Larus Technologies Corp); Rami Abielmona (Larus Technologies Corp); Voicu Groza (University of Ottawa); Moufid Harb (Larus Technologies Corp); and Emil Petriu (University of Ottawa);
- *Multi-UAV Path Planning with Parallel Genetic Algorithms on CUDA Architecture* by Ugur Cekmez (Yildiz Technical University); Mustafa Ozsiginan (Turkish Air Force Academy); and Ozgur Koray Sahingoz (Turkish Air Force Academy);
- *Dynamics of Adversarial Co-evolution in Tax Non-Compliance Detection* by Jacob Rosen (MIT, CSAIL); Erik Hemberg (MIT, CSAIL); Una-May O'Reilly (MIT, CSAIL);

- *Initiating a Moving Target Network Defense with a Real-time Neuro-evolutionary Detector* by Robert J. Smith (Dalhousie University); A. N. Zincir-Heywood (Dalhousie University); Malcolm I. Heywood (Dalhousie University); and John T. Jacobs (Raytheon);
- *An Incremental Ensemble Evolved by Using Genetic Programming to Efficiently Detect Drifts in Cyber Security Datasets* by Gianluigi Folino (ICAR-CNR); Francesco S. (Sergio) Pisani (ICAR-CNR); Pietro Sabatino (ICAR-CNR).

We would like to thank the authors for submitting these excellent papers, and strongly encourage the broader security and defense research community to prepare and submit technical papers to future SecDef workshops. In addition, we thank ACM SIGEvo and GECCO 2016 organizers, especially Gisele Pappa and Markus Wagner (GECCO 2016 Workshops Chairs), for their assistance.

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SecDef Workshop 2016 Organization

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