

Military and Security Applications of Evolutionary Computation (MSAEC-2004) Workshop

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Workshop Summary

Almost since its inception, evolutionary computation has been applied to the solution of military problems. Since September 11, 2001, there has been increased interest within the military and security communities in novel techniques for solving challenging problems within their domains. The genesis of this interest lies in the fact that repeated attempts of using traditional techniques have left many important problems unsolved, and in some cases, not addressed. Additionally, new problems have emerged within the broad areas of the global war on terrorism, homeland security, and force protection that are difficult to tackle with conventional methods, since social, cultural and human behavioral factors tend to be at the heart of these new types of problems.

The purpose of the workshop is to introduce and discuss current and ongoing efforts in using genetic and evolutionary computation techniques in attacking military and security problems. These include, but are not limited to the following:

- genetic and evolutionary techniques in the design of military systems and sub-systems;
- genetic and evolutionary techniques for logistics and scheduling of military operations;
- genetic and evolutionary algorithms (GEAs) in strategic planning and tactical decision making;
- Multiobjective GEAs for examining tradeoffs in military, security, and counterterrorism procedures;
- Automated discovery of tactics and procedures for site security, force protection, and consequence management;
- Genetics-based knowledge discovery and data mining of large databases used to recognize patterns of individual behavior;
- Co-evolutionary techniques for simultaneous red-blue team strategic-tactical simulation and gaming.