Evolutionary Computation and Multi-Agent Systems and Simulation (ECoMASS) Chairs' Welcome



Welcome to the Eighth Annual Workshop on Evolutionary Computation and Multi-Agent Systems and Simulation (ECoMASS 2014)!

Evolutionary computation (EC) and multi-agent systems and simulation (MASS) both involve populations of agents. EC is a learning technique

by which populations of individual agents adapt according to the selection pressures exerted by an environment; MASS seeks to understand how to coordinate the actions of a population of (possibly selfish) autonomous agents that share an environment so that some outcome is achieved. Both EC and MASS have top-down and bottom up features. For example, some aspects of multi-agent system engineering (e.g., mechanism design) are concerned with how top-down structure can constrain or influence individual decisions. Similarly, most work in EC is concerned with how to engineer selective pressures to drive the evolution of individual behavior towards some desired goal. Multi-agent simulation (also called agent-based modeling) addresses the bottom-up issue of how collective behavior emerges from individual action. Likewise, the study of evolutionary dynamics within EC (for example in coevolution) often considers how population-level phenomena emerge from individual-level interactions. Thus, at a high level, we may view EC and MASS as examining and utilizing analogous processes. It is therefore natural to consider how knowledge gained within EC may be relevant to MASS, and vice versa; indeed, applications and techniques from one field have often made use of technologies and algorithms from the other field. Studying EC and MASS in combination is warranted and has the potential to contribute to both fields.

The ECoMASS Workshop at GECCO has a successful history as a forum for exploring precisely this intersection, and we are looking forward to another year of stimulating discussion, bringing together experts as well as novices in both areas, to engage in dialogue about their work. This year's participants bring a variety of research topics for discussion, including migratory flows, the beating of the heart, embedded systems, pelotons and cyclists, and flocking behavior. This year, we will also be adding a "research slam". We will be inviting presenters who are presenting in the general conference to give us a quick presentation about their work. We hope that this will further encourage additional lively discussion about a wide range of topics. We also encourage presenters to demonstrate their software live during a breakout session, enabling additional opportunities for one-on-one dialogue and discussion of actual running systems. Through these additions to the workshop, we hope to continue to innovate, and develop the conversations around the interesting intersection of evolutionary computation and multi-agent systems and simulations!

Forrest Stoendahl

William Rand

ECoMASS'14 General Chair Augustana College, USA ECoMASS'14 General Co-Chair University of Maryland, USA

Evolutionary Computation and Multi-Agent Systems and Simulation (ECoMASS) Workshop Organization

General Chairs:	Forrest Stonedahl (Augustana College, USA) William Rand (University of Maryland, USA)
Program Committee:	Emily Zechman Berglund (North Carolina State University) Mitchell Colby (Oregon State University)
	Sherri Goings (Carleton College)
	Matt Knudson (Carnegie Mellon University)
	Rinde van Lon <i>(KU Leuven)</i>
	Michael North (Argonne National Laboratory)
	Jim Reggia (University of Maryland)
	Robert G. Reynolds (Wayne State University)
	Rick Riolo (University of Michigan)
	Logan Yliniemi (Oregon State University)
	Tina Yu (Memorial University of Newfoundland)
	Moshe Sipper (Ben-Gurion University)