

UNIVERSITY OF SOUTH FLORIDA

Major Research Area Paper Presentation

Interactive Fitness Domains in Competitive Coevolutionary Algorithm

by

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For the Ph.D. degree in Computer Science & Engineering

Evolutionary Algorithms (EA) have been successfully applied to a wide range of optimization and search problems where no mathematical model of the quality of a candidate solution is available. Interactive Evolutionary Algorithms (IEA) and Competitive Coevolutionary Algorithms (CCoEA) go one step further by being able to tackle problems where the only means to evaluate the quality of a candidate solution is via interactions. In a typical IEA, interactions take place between the solution being evolved and human evaluators; the latter provides a way to select solutions based on his/her choice among a pool of candidates. In a CCoEA, interactions take place between candidate solutions themselves, without need for human interaction. Our work focuses on the challenges and benefits common to both types of interaction-driven EAs. We identify Computer-Aided Learning as an application domain that exemplifies the overlap of both fields. This leads to leverage recent theoretical breakthroughs from the CCoEA community to evolve practice problems for students in a computer-programming course. In doing so, we investigate the relevance of CCoEA techniques to interactive domains, identify problem characteristics which require us to further adapt existing algorithms, and propose ways to achieve such improvements.

Tuesday, Nov 07, 2017

11:00 am

ENC 3006

THE PUBLIC IS INVITED

Examining Committee

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