FS2017

COEVOLUTION ANALYSIS
COMP SCI 5401 FS2017 ASSIGNMENT 2C

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Assignment 2c

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Methodology

This CoEA implemented is a single-population coevolution and tree based genetic programming search for the optimal iterated prisoner dilemma problem. For each new generation, the algorithm first generates all new children without calculating any of the new fitness's until each of the children are created. Once all the children are created, the algorithm calculated the fitness for each of the newly created children. It does this by randomly selecting a user-configurable amount of other individuals from a pool containing the population and all of the newly created children. This selection process is uniform random. The newly created child then plays the IPD simulation for a user configurable amount of iterations. The fitness against this opponent is inversely proportional to the amount of time the newly created child spent in jail as a result of its strategy. This process is repeated for each of the randomly selected opponents, and the newly created child's fitness is an average of its fitness's from each opponent.

Experimental Setup

Results

Discussion

Conclusion