A Genetic Approach to Planning in Heterogeneous Computing Environments

Han Yu, Dan C. Marinescu, Annie S. Wu
School of Electrical Engineering and Computer Science
University of Central Florida
Orlando, Florida, 32816, USA
hyu, dcm, aswu@cs.ucf.edu

Howard Jay Siegel
Department of Electrical and Computer Engineering
and Department of Computer Science
Colorado State University
Fort Collins, Colorado, 80523-1373, USA
hj@colostate.edu

Planning is an artificial intelligence problem with a wide range of real-world applications. Genetic algorithms, neural networks, and simulated annealing are heuristic search methods often used to solve complex optimization problems. In this paper, we propose a genetic approach to planning in the context of workflow management and process coordination on a heterogenous grid. We report results for two planning problems, the Towers of Hanoi and the Sliding-tile puzzle.