SYSTEMS, CONTROLS AND ROBOTICS SEMINAR SERIES

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4:00 p.m. / 108 Jack E. Brown Chemical Engineering Bldg

Recent Algorithms for the Assignment Problem in Multi-Robot Task Allocation

ABSTRACT

Dr. Shell will describe recent research toward the goal of Engineering multi-robot systems to form networks of efficient, cooperative, taskable agents. Dr. Shell will consider variations of the multi-robot task allocation (assignment) problem, wherein one aims at finding the best matching between a set of robots and a set of tasks so that the team's performance will be optimized. This assignment problem is one of the most popular formulations for optimixing the group synergy. He'll describe new algorithms and results that show improvements in performance, scalability, and robustness for general-purpose coordinated mobile robot systems.

BIO

Dylan Shell is an Assistant Professor of computer science and engineering at Texas A&M University in College Station, Texas. He received his BSc degree in Computational & Applied Mathematics and Computer Science from the University of the Witwatersrand, South Africa, and his M.S. and Ph.D. in Computer Science from the University of Southern California. His research aims to synthesize and analyze complex, intelligent behavior in distributed systems that exploit their physical embedding to interact with the physical world.

He has published papers on multi-robot task allocation, robotics for emergency scenarios, biological-ly inspired multiple robot systems, multi-robot routing, estimation of group-level swarm properties, statistical mechanics for robot swarms, minimalist manipulation, wireless communication models for robot systems, interpolation for adaptive robotic sampling, rigid-body simulation and contact models, human-robot interaction and robotic theatre.

Pizza will be served at 3:45 p.m.