

Sample-path Techniques for Optimization and Control of Discrete Event Dynamic Systems

Organizer: Yorai Wardi, Georgia Institute of Technology, Atlanta - USA

Key words: Infinitesimal Perturbation Analysis (IPA), sample-path optimization, control.

Recent developments in control and on-line optimization of DEDS and hybrid systems have focused on large-scale problems in various application areas, including highway transportation, finance, energy, and water distribution. The application of Infinitesimal Perturbation Analysis (IPA) to such systems may be limited in scope due to the high complexity of their models and the large size of the problems. Therefore, several approaches to extend IPA and other sample-path methods recently have been explored, based on various modeling frameworks such as Markov decision processes, reinforcement learning, and concurrent estimation. The purpose of this proposed session is to provide an exposition of such approaches and discuss their potential merits in applications.

Contact:

Yorai WARDI,
School of Electrical and Computer Engineering, Georgia Institute of Technology,
Atlanta, GA 30332, USA
Email: ywardi@ece.gatech.edu