Information Science and Technology Seminar Speaker Series

Professor Kevin Lin
University of Arizona

"Faster Dynamic Monte Carlo via Markov Couplings"

Wednesday, August 1, 2012
3:00 - 4:00 PM
TA-3, Bldg. 1690, Room 102 (CNLS Conference Room)

Abstract: Dynamic Monte Carlo methods are widely used in scientific and engineering computation. In this talk, I will report on our recent efforts to accelerate dynamic Monte Carlo calculations using a tool from probability theory, namely Markov couplings. Specifically, I will discuss coupling-based algorithms for two distinct but related problems involving stochastic differential equations: sensitivity analysis and variance reduction.

Biography: Kevin Lin's general research interests center around nonlinear dynamics and computing. Much of his recent work has been motivated by questions from computational neuroscience; he also has interests in nonequilibrium statistical mechanics and Monte Carlo methods. Dr Lin received SB and MEng degrees in Computer Science from MIT and a PhD in Mathematics from UC Berkeley. He has held visiting positions at the Courant Institute at New York University and the Statistical and Applied Mathematical Sciences Institute in North Carolina. Since 2007, he has been an assistant professor of mathematics and a member of the Program in Applied Mathematics at the University of Arizona.

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