University of Rochester Department of Electrical and Computer Engineering Colloquia

Uncertainty-Aware and Data-Driven Design Verification for Nanoscale Systems and Multi-Domain Applications

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robot control without full knowledge of design or environmental parameters, energy systems dent renewable energy sources, and magnetic resonance imaging (MRI) with incomplete data. Modeling, controlling and optimizing these problems are generallyidtatasive: one analyze a huge amount of costly data in a parameter space. This often leads to the notorious ality: the complexity grows extremely fast with the number of uncertainty or/and design lk presents some fast noiMonte-Carlo techniques to verify the performance of uncertain s. These techniques can accelerate a lot of uncertainty are optimization, contol and data to primization of silicon chips, robust control of robots and power systems, electrical only using MRI data). The first part will present some fast algorithms to simulate nonlinear affected by a small number of uncertain parameters. The second part will present some lgorithms to predict the performance uncertainties of an engineering system influenced by uneters. The main application is variability size fances and MRI) will also be demonstrated.

