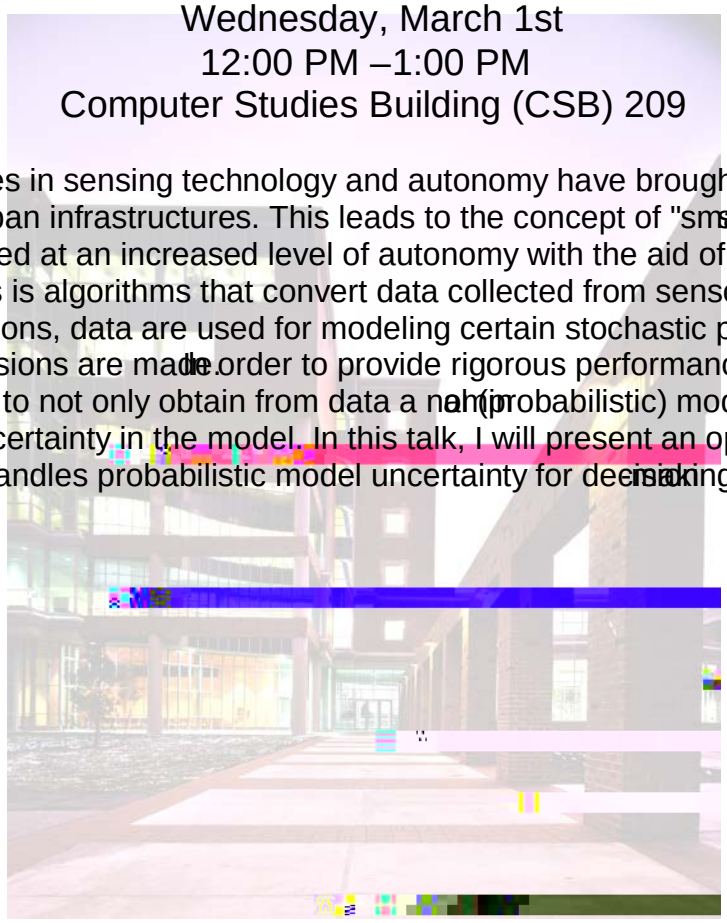
University of Rochester
Department of Electrical and Computer Engineering Colloquia

Data-Driven Control and Optimization for Urban Infrastructures

Dr. Shuo Han

Wednesday, March 1st
12:00 PM –1:00 PM
Computer Studies Building (CSB) 209



Abstract: Recent advances in sensing technology and autonomy have brought a myriad of new access points sensing and control in urban infrastructures. This leads to the concept of "smart cities" in which urban infrastructures are operated at an increased level of autonomy with the aid of sensing and control. A key component of smart cities is algorithms that convert data collected from sensors to decisions used for city operation. In many applications, data are used for modeling certain stochastic phenomena (e.g., human demand in cities) upon which decisions are made. In order to provide rigorous performance guarantees in decision making, it often desirable to not only obtain from data a nominal (probabilistic) model of the stochastic phenomenon but also uncertainty in the model. In this talk, I will present an optimization-based framework that explicitly quantifies and handles probabilistic model uncertainty for decision making. A distinctive feature of the