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*Machine Learning for Cyber-Physical Systems and the  
Internet-of-Things: Case studies in Smart Buildings and IoT  
Device Discovery*

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**Abstract:** In this talk, we will discuss the application of machine learning to two application spaces: namely, smart buildings and Internet-of-Things (IoT) device discovery. First, we describe how we use signal processing and machine learning techniques to uncover anomalous behavior patterns in the climate-control and electrical equipment in buildings. We also describe the challenges and machine-learning based solutions for data integration across building management systems. Then, we will switch gears to discuss the intricacies in IoT device discovery on live networks. We describe how existing approaches fail to deal with discovery and how a combination of deep-learning and probabilistic modeling allows us to give meaningful feedback about devices to network administrators. We will close by highlighting on-going work in the Cyber-Physical Intelligence Lab at Rutgers University and discuss emerging opportunities for machine learning in the real-world, engineered systems.

Friday, February 22, 2019, 2:00 pm  
Planetarium - E300 MSC

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