The Johns Hopkins University  
Whiting School of Engineering  
Department of Electrical and Computer Engineering

"Probabilistic Techniques for Extracting Structure from (Clinical) Time Series Data"

A Seminar by

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Abstract: As storage costs are reducing, time series data at scale are being increasingly collected in a number of environments, yet there remains a gap for techniques that bring in domain information to extract meaningful structure from such data. For example, physiological time series data are routinely recorded in intensive care, but their use for rapid assessment of illness severity has been limited. The data is high-dimensional, noisy, and changes rapidly; moreover, small changes that occur in a patient's physiology over long periods of time are difficult to detect, yet can lead to catastrophic outcomes. A physician’s ability to recognize complex patterns across these high-dimensional measurements is limited.

In this talk, I will present probabilistic approaches for extracting informative representations from temporal data. We show an application of our approach to identifying early infants at risk for major complications. In a second application, we will discuss preliminary results in characterizing patients with autoimmune disorders.

Bio: Suchi Saria is an Assistant Professor at Johns Hopkins University within the Schools of Engineering and Public Health. She received her PhD in machine learning from Stanford University with Prof. Daphne Koller. Her research interests span machine learning and computational modeling techniques for drawing inferences form diverse, large scale temporal data collected from real world systems. In her work, she has focused on modeling such data from electronic health records, which are messy but contain valuable nuggets of information that have until recently been underutilized. Her work on predictive modeling for clinical data from infants has been covered by numerous national and international press sources. She is the recipient of multiple awards including a best student, a best paper finalist, Microsoft Full Scholarships, an NSF Computing Innovation fellowship, a Google Research award and a Gordon and Betty Moore foundation award. She has given over 25 invited talks on her work in the last 3 years including presenting to an audience of health policy makers on the value of mining health systems data.

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3:00 pm
Barton 117

Refreshments will be served at 2:45 pm

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