ELECTRICAL AND COMPUTER ENGINEERING SEMINAR

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Reinforcement Learning Perspective to Data-Driven and Model Based Experimental Design

Thursday, April 8

Zoom Link:
https://northeastern.zoom.us/j/98052425344
11:00am - 12:00pm

Abstract: Design and decision-making are pervasive in most practical systems including smart grids, transportation, manufacturing, healthcare, and smart homes. Accurate system modeling is difficult in most systems/processes due to the complicated system dynamics, multi-physics and multiple time scales involved in phenomena, hybrid dynamics across cyber and physical layers, and various sources of parametric and environmental uncertainties. Design and decision-making in these systems are fraught with choices, choices that are often expensive, complex, and high-dimensional, with interactions and uncertainties that make them difficult for individuals to reason about. This talk will mainly focus on the speaker's latest research on providing a new unified reinforcement learning perspective for model-based and data-driven experimental design to enable scalable, efficient, and reliable design and decision-making under various sources of uncertainty.

Bio: Mahdi Imani is an Assistant Professor in the Department of Electrical and Computer Engineering at the George Washington University. He received his Ph.D. degree in Electrical and Computer Engineering from Texas A&M University in 2019, and his M.Sc. degree in Electrical Engineering and his B.Sc. degree in Mechanical Engineering, both from University of Tehran in 2014 and 2012. His research interests include Machine Learning, Control Theory, and Signal Processing, with a wide range of applications from computational biology to cyber-physical systems. He has been elevated to IEEE Senior Member grade in 2021. He is also the recipient of multiple awards, including NSF SCH Aspiring PI Awardee in 2020 and 2021, IBM Research Almaden Distinguished Speaker in 2019, the Association of Former Students Distinguished Graduate Student Award for Excellence in Research-Doctoral in 2019, the Best Ph.D. Student Award in ECE department and a single finalist nominee of ECE department for the Outstanding Graduate Student Award in the college of engineering at Texas A&M University in 2018, and the best paper finalist award from the 49th Asilomar Conference on Signals, Systems, and Computers, 2015.