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Scalable and Reliable Learning: A Bayesian Perspective

Friday, December 6, 2019, 11:00 am

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Abstract

Advancements in technology have had tremendous impact on our society through enabling smarter infrastructures, autonomous systems, health communities, and more. While machine learning has shown a huge success in some domains in recent years, to deal with these practical domains, there is a need for highly scalable, reliable and online tools to process a large amount of data in real time by taking many constraints and uncertainties into account. An example of that is in smart cities in which the real-time data acquired on a daily basis through cameras and sensors, need to be processed for enhancing the safety, health and comfort of society. Meanwhile, these practical systems are exposed to faults or cyber-attacks which need to be identified before putting the systems, human lives or environment at risk. This talk will focus on two main issues that the existing machine learning or engineering tools often face in practice, which are lack of reliability and lack of scalability. In particular, the main focus of this talk will be around design and decision-making from the Bayesian statistical perspective.

Biography

Seyede Fatemeh Ghoreishi is a postdoctoral research fellow at the Institute for Systems Research (ISR) at the University of Maryland. She received her Ph.D. and M.Sc. degrees both in Mechanical Engineering from Texas A&M University in 2019 and 2016 respectively. She holds a minor in Applied Statistics from the department of Statistics at Texas A&M University. She also received a M.Sc. degree in Biomedical Engineering from Iran University of Science and Technology in 2014 and a B.Sc. degree in Mechanical Engineering from the University of Tehran in 2012. Her research interests include Machine Learning, Bayesian Statistics and Design under Uncertainty with applications in aerospace engineering, materials science, and robotics. She is the recipient of several awards including being selected as Rising Stars in Computational and Data Sciences at the Oden Institute for Computational Engineering and Sciences at the University of Texas at Austin in 2019.