

Electrical & Computer Engineering Seminar Series

Computer Engineering



From Machine Learning to Machine Reasoning

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Wednesday October 16, 2019

11:15am -12:05 pm

204 Evans Hall

Intelligent decision support systems have been widely embedded into the daily life of human-beings, such as recommendation systems in social networks and e-commerce, search engines that people use nearly everyday, and the emerging conversational agents such as Siri, Alexa, and Google Assistant. They help users to make informed decisions by providing helpful information or insightful suggestions. In recent years, intelligent decision support systems extensively rely on machine learning (mostly deep learning) methods to train a black-box model over large-scale data for decision making, which — though with high precision in many cases — are less effective in telling us why a particular decision is made. In this talk, we will introduce our continuous efforts to develop explainable decision support systems, where the system can not only tell us what to do, but also why to do so. In particular, we will introduce our recent efforts on neural logic reasoning and causal reasoning for explainable decision making, as well as their application in search engine, recommender systems, and conversational intelligent agents.

Yongfeng Zhang is an Assistant Professor in the Department of Computer Science at Rutgers University (The State University of New Jersey). His research interest is in Information Retrieval, Recommender Systems, Machine Learning, and Internet Economics. In the previous he was a postdoc at UMass Amherst, and did his PhD and BE in Computer Science at Tsinghua University, with a BS in Economics at Peking University. He is a Siebel Scholar of the class 2015. He has been consistently working on explainable machine learning and its applications in recommender systems, search engine, and conversational systems.