Electrical & Computer Engineering Seminar Series

Computer Engineering

Taming Latent Factor Models for Explainability

Hongning Wang
Department of Computer Science
Assistant Professor, University of Virginia

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Latent factor models have achieved great success in personalized recommendations, but they are also notoriously difficult to explain. In this talk, I will share our recent effort in integrating regression trees to guide the learning of latent factor models for explainable recommendation. Specifically, we build regression trees on users and items recursively based on user-provided review content, and associate a latent factor to each node on the trees to represent users and items for recommendation. With the growth of regression tree, we are able to track the creation of latent factors by looking into the path of each factor on regression trees, which thus serves as an explanation for the resulting recommendations. If time allows, I would also like to share our progress in multi-task tensor factorization and generative neural collaborative filtering for explainable recommendation.

Dr. Hongning Wang is now an Assistant Professor in the Department of Computer Science at the University of Virginia. He received his Ph.D. degree in computer science at the University of Illinois at Champaign-Urbana in 2014. His research generally lies in the intersection among machine learning, data mining and information retrieval, with a special focus on interactive user intent modeling. His work has generated over 60 research papers in top venues in data mining and information retrieval areas. He is a recipient of 2016 NSF CAREER Award and 2019 SIGIR Best Paper Award.