



Temple
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Department of Computer and Information Sciences

Toward Fairness-aware Recommender Systems

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Zoom Link: <https://temple.zoom.us/j/99112904683>

Abstract: AI-powered user-centered systems build upon advances in AI and machine learning to help users access critical information and knowledge, connect to media, build social circles, and shape our daily decisions. Examples include search and recommendation engines, conversational agents (chatbots), and eLearning systems supporting personalized learning. With such wide and deep impacts, these systems exert strong but often unforeseen and detrimental influence on the social processes connected to culture, politics, ethics, economic well-being, and even social justice. For example, machine learning based search engines and recommender systems have been shown to exhibit discrimination against women and people of color; expose children to inappropriate content; and intensify political polarization. Therefore, there is a pressing need to identify, analyze, and address these potential risks and harms to augment responsibility while advancing these AI-powered systems.

In this talk, I will introduce my work on fairness in AI-powered recommender systems. There are three major research challenges toward fairness-aware recommendation: (1) how to appropriately define recommendation fairness? (2) how to quantitatively measure fairness? and (3) how to effectively enhance fairness? This talk will introduce my recent work centered around these three questions. First, I will introduce a novel latent factor intervention algorithm to augment the fairness defined by the concept of score-based statistical parity. Then, I will show how I evolve the fairness definition to the concept of ranking-based equal opportunity and introduce an effective and flexible adversarial learning algorithm to enhance fairness. I will conclude the talk by briefly contextualizing my ongoing and future work as part of a broader research agenda with new related problems and potential collaborations in the next few years.

Bio: Ziwei Zhu is a Ph.D. candidate in Computer Science and Engineering Department at Texas A&M University advised by Prof. James Caverlee. He works at the intersection of machine learning, data mining, and information retrieval with a special focus on augmenting responsibility in AI-powered user-centered systems to provide fair, unbiased, accountable, and trustworthy information services to both end-users and society-at-large. Ziwei has authored 20 publications in premier academic venues such as KDD, SIGIR, WebConf, WSDM, and RecSys. He has also served as a reviewer for 9 different journal venues and a PC member for KDD and WSDM.

