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THE DEPARTMENT OF COMPUTER SCIENCE & THE COMPUTER SCIENCE GRADUATE STUDENT ORGANIZATION (GSOCS) PRESENT

INVITED SPEAKER SERIES
co-sponsored with GSO and partially paid for by student activity fees

Dr. Ruofei (Bruce) Zhang
Microsoft
Friday, November 1st at 12 noon, FA room 258

Cognitive Services and Deep Learning in Search Advertising

Abstract: The advancement of AI has rapidly become a transformative power with tremendous potential to change the way we live, learn, and work. In this talk I will first give an overview of Microsoft Cloud+AI and Cognitive Services to empower users, developers, and enterprises to enjoy or leverage AI technologies to improve their experience and productivity. Then I will introduce large scale search advertising system and its many AI problems and technological challenges in areas including Natural Language Understanding, Computer Vision, Machine Learning, Optimization Algorithm, and Knowledge Graph. I will walk through these various challenges and share the cutting edge technologies and deep learning models my team has developed and deployed in our algorithm and system stack to improve ads quality and increase revenue, such as query/ads semantic embedding models, generative models for query rewriting, DNN based query-keyword relevance model, attention network for intent extraction, user representation model, shopping assistant bot, visual product recognition model, product detection and description generation models for online images and photos taken by smart phone.

Bio: Dr. Ruofei (Bruce) Zhang is Partner Group R&D Director in Microsoft AI & Research, he oversees research and development of query/ads understanding and matching algorithms, relevance ranking, BLP and Computer Vision machine learning models, information retrieval, personalization, and large-scale distributed serving systems development that power Ads retrieval in Microsoft Advertising Marketplace. Prior to joining Microsoft, Dr. Zhang was R&D Director and Principal Scientist at Yahoo Labs, managing its Data Mining and Relevance Optimization Group in Advertising Science Department. He led the team to develop and operate Yahoo's search, contextual, and display ads systems serving US and global markets. Before working on AI technologies for online advertising, Dr. Zhang was in charge of Relevance R&D for Yahoo Video Search. Dr. Zhang's research areas include NLP, machine learning, data mining, computational advertising, optimization, computer vision and multimedia imformation retrieval, as well as the applications of these technologies in Internet search and online advertising systems. In those areas, he has coauthored two monograph books and published more than 5- papers on premier journals and top conferences, and has been granted 12 US patents. He has been regularly serving as program committee members, reviewers, speakers, panelists for numerous leading academic conferences and journals as well as federal agencies including NSF.