Keynote 2: Thorsten Joachims

Fair Ranking with Biased Data in Two-Sided Markets

Search engines and recommender systems have become the dominant matchmaker for a wide range of human endeavors -- from online retail and entertainment to finding employment and romantic partners. Consequently, they carry substantial power in shaping markets and allocating opportunity to the participants. In this talk, I will discuss how the machine learning algorithms underlying these system can produce unfair ranking policies for both exogenous and endogenous reasons. Exogenous reasons often manifest themselves as biases in the training data, which then get reflected in the learned ranking policy and lead to rich-get-richer dynamics. But even when trained with unbiased data, reasons endogenous to the algorithms can lead to unfair or undesirable allocation of opportunity. To overcome these challenges, the talk will connect techniques from off-policy learning, fairness of exposure, and fair devision to develop new methods for ranking in two-sided markets.

Bio:
Thorsten Joachims is a Professor in the Department of Computer Science and in the Department of Information Science at Cornell University, and he is an Amazon Scholar. His research interests center on a synthesis of theory and system building in machine learning, with applications in information access, language technology, and recommendation. His past research focused on counterfactual and causal inference, learning to rank, structured output prediction, support vector machines, text classification, learning with preferences, and learning from implicit feedback. He is an ACM Fellow, AAAI Fellow, KDD Innovations Award recipient, and member of the ACM SIGIR Academy.