Learning from Rational* Behavior

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Abstract

The ability to learn from user interactions can give systems access to unprecedented amounts of knowledge. This is evident in search engines, recommender systems, and electronic commerce, and it can be the key to solving other knowledge intensive tasks. However, extracting the knowledge conveyed by user interactions is less straightforward than standard machine learning, since it requires learning systems that explicitly account for human decision making, human motivation, and human abilities.

In this talk, I argue that the design space of such interactive learning systems encompasses not only the machine learning algorithm itself, but also the design of the interaction under an appropriate model of user behavior. To this effect, the talk explores how integrating microeconomic models of human behavior into the learning process leads to new interaction models and their associated learning algorithms, leading to systems that have provable guarantees and that perform robustly in practice.

About the Speaker

Thorsten Joachims is a Professor in the Department of Computer Science and the Department of Information Science at Cornell University. 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 support vector machines, text classification, structured output prediction, convex optimization, learning to rank, learning with preferences, and learning from implicit feedback. In 2001, he finished his dissertation advised by Prof. Katharina Morik at the University of Dortmund. From there he also received his Diploma in Computer Science in 1997. Between 2000 and 2001 he worked as a PostDoc at the GMD Institute for Autonomous Intelligent Systems. From 1994 to 1996 he was a visiting scholar with Prof. Tom Mitchell at Carnegie Mellon University.

* Restrictions apply. Some modeling is required.

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