Interplay between Machine Learning and Artificial Intelligence

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Abstract
In the era of big data, we need novel algorithms on top of the supporting platform. In this talk, I will focus on the interaction between machine learning algorithms and traditional artificial intelligence techniques including graph search, combinatorial optimization, and planning. In particular, I will discuss two works. The first one applies manifold learning and dimensionality reduction algorithms to speed up graph search and automated planning. The second one applies graph search to solve submodular optimization problems arising from machine learning contexts. These works shed new insights into the deep connection between machine learning and AI.

Short Biography
Yixin Chen is an Associate Professor of Computer Science at the Washington University in St. Louis. His research interests include data mining, machine learning, artificial intelligence, and optimization. He received a Ph.D. in Computing Science from the University of Illinois at Urbana-Champaign in 2005. He received the Best Student Paper Runner-up Award at the ACM SIGKDD Conference (2014), Best Paper Award at the AAAI Conference on Artificial Intelligence (2010), and the International Conference on Tools for AI (2005). His work on planning has won First Prizes in the International Planning Competitions (2004 & 2006). He received an Early Career Principal Investigator Award from the Department of Energy (2006) and a Microsoft Research New Faculty Fellowship (2007). His research has been funded by NSF, NIH, DOE, Microsoft, and Memorial Sloan-Kettering Cancer Center. He is an Associate Editor for ACM Transactions of Intelligent Systems and Technology and serves on the Editorial Board of Journal of Artificial Intelligence Research.