How Can I Help You? Knowledge Graphs for Explainable Recommendation

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Abstract

In our complex modern world, we increasingly rely on automated systems to guide us in our decision-making. Intelligent recommender systems require knowledge about the users and about potential items of interest, but can also benefit from various sorts of background knowledge, e.g., how different human activities relate to one another. In this talk, I discuss several methods to bring together these various kinds of knowledge by means of knowledge graphs and neuro-symbolic explainable AI. Such methods draw on deep reinforcement learning or neural logic reasoning to provide explanations that allow users to better understand why particular items are being recommended. I will also discuss our work on how to mitigate bias and enable dialogue-based interaction in conversational recommender systems, along with datasets and code that we have released to promote further research on these topics.

1. Speaker

Gerard de Melo is a professor at the Hasso Plattner Institute for Digital Engineering and the University of Potsdam, Germany, where he holds the Chair for Artificial Intelligence and Intelligent Systems. He has published over 150 papers, with Best Paper awards at CIKM 2010, ICGL 2008, the EACL 2021 LANTERN Workshop, the NAACL 2015 Workshop on Vector Space Modeling, as well as the WWW 2011 Best Demonstration Award, among others. Previously, he was a professor at Rutgers University in New Jersey and at Tsinghua University in Beijing, and a Post-Doctoral Research Scholar at ICSI/UC Berkeley. He received his doctoral degree at the Max Planck Institute for Informatics. Further details are available at http://gerard.demelo.org/.