

Distinguished Speaker Series
Friday, February 3 at 11:30am, NTDP F285

Automating Common Sense Reasoning

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Abstract

In this talk I will discuss the problem of automating common sense reasoning. I will first give an introduction to answer set programming (ASP), a rule-based paradigm for programming intelligent applications. ASP is based on non-monotonic logic, frequently employed in common sense reasoning where conclusions may be withdrawn as more information becomes available. ASP allows simulation of reasoning techniques that humans employ on a daily basis---default reasoning, counterfactual reasoning, abductive reasoning, preferences, etc. I will then give an overview of the s(ASP) system, a query-driven predicate answer set programming system developed by my group. The s(ASP) system overcomes many practical limitations faced by the current ASP systems. I will also discuss applications of ASP (and the s(ASP) system) to various domains: web-based recommendation systems, undergraduate degree audit and advising, disease management, Internet-of-Things, etc.

Bio

Gopal Gupta is the head of the Computer Science Department at the University of Texas at Dallas where he holds the Erik Jonsson professorial chair. He has conducted research in automated reasoning, computational logic, programming languages, parallel computing, and assistive technology and has published extensively in these areas. His group has also authored many software systems, including the s(ASP) system. His research work has also resulted in commercial software systems that have formed the basis of two start-up companies. He has won several best-paper awards as well as the ICLP 2016 test-of-time award for his work on coinductive logic programming, the technique that serves as the foundation of the s(ASP) system. He obtained his MS & PhD degrees from UNC Chapel Hill and his B.Tech in Computer Science from IIT Kanpur, India.