Swati Gupta

Assistant Professor, Industrial and Systems Engineering at Georgia Tech College of Engineering

Atlanta, GA, US

Gupta's research focuses on optimization, machine learning, and bias and fairness within the AI sphere.

Biography

Dr. Swati Gupta is an Assistant Professor in the H. Milton Stewart School of Industrial and Systems Engineering at Georgia Tech. Prior to her arrival at Georgia Tech, she spent two semesters as a Fellow at the Simons Institute, UC Berkeley, participating in programs on Bridging Continuous and Discrete Optimization and Real-time Decision Making. She received her Ph.D. in operations research from the Massachusetts Institute of Technology Operations Research Center and a dual degree (B.Tech and M.Tech) in computer science and engineering from the Indian Institute of Technology, Delhi. Gupta's research interests lie primarily in combinatorial, convex, and robust optimization with applications in online learning and data-driven decision-making under partial information. Her work focuses on speeding up fundamental bottlenecks that arise in learning problems due to the combinatorial nature of the decisions, as well as drawing from machine learning to improve traditional optimization methods. She has worked on providing optimized inventory routing decisions under uncertain demand, and pricing items optimally while incorporating effects of sales and promotions. She has collaborated with industrial research labs such as the IBM Research Lab in Zurich, Switzerland and the Oracle Retail Data Science Group. Gupta is further interested in exploring strategic behavior of customers, fairness and bias in decisions, and unintended consequences of optimization. Gupta was the Microsoft Research Fellow at Simons Institute in Spring 2018, and she received the prestigious Simons-Berkeley Research Fellowship for the academic year 2017-18. Her collaborative work on systematically evaluating heuristics and understanding which heuristic or algorithm works best on unseen problem instances received a special recognition from the INFORMS Computing Society in their Student Paper Competition in 2016. She was also a finalist for the INFORMS Service Science Student Paper Competition for her work on promotion optimization for retail items. Gupta received the Google Women in Engineering Award in India in 2011.

Areas of Expertise

Data-driven Decision-making Under Partial Information, Online and Machine Learning, Combinatorial, Convex and Robust Optimization, Fairness and Bias in Decisions

Education

Simons Institute, UC Berkeley
Research Fellow

Massachusetts Institute of Technology
Ph.D. Operations Research

Indian Institute of Technology, Delhi
B.Tech & M.Tech Computer Science and Engineering

Selected Accomplishments

Simons-Berkeley Research Fellowship
For Bridging Continuous and Discrete Optimization and Real-Time Decision Making Programs Fall 2017 - Spring 2018

Google Women in Engineering Award
2011

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