Title: A Computational Approach towards Incentives in Social Choice

Speaker: Dr. Rohit Vaish, TIFR, Mumbai (https://sites.google.com/site/rohitvaish31/)

Date and Time: June 17, 2021 (Thu), 3:30 PM

Venue: Zoom

Abstract:

Group decision-making is a ubiquitous phenomenon with diverse applications ranging from political elections to recommender systems and from organ exchanges to online marketplaces. Social choice is a subfield of economics that provides a formal framework for studying group decision-making procedures. Classically, social choice theory has focused on establishing abstract results concerning the existence of procedures that provide the desired incentives to the participating agents. However, in order to be practically applicable, the mere existence of such procedures is not enough---efficient computation is important as well.

In this talk, I will illustrate the role of computation in shaping agents' incentives via three results. The first result gives an algorithmic framework for allocating indivisible resources that simultaneously achieves the seemingly incompatible goals of fairness and economic efficiency. The second result leverages a well-known algorithm in the economics literature to reconcile two traditionally disjoint approaches towards fairness, namely randomization and approximation. The third result shows how computational complexity can delineate the extent of social welfare in a generalization of the classical stable matching problem. I will conclude with an overview of my other work and future research directions.

Bio:

Rohit Vaish is a visiting fellow at Tata Institute of Fundamental Research (TIFR). Previously, he was a postdoctoral researcher at Rensselaer Polytechnic Institute (RPI) and, prior to that, received his PhD from Indian Institute of Science (IISc). His research is in computational social choice---a rapidly growing area at the intersection of theoretical computer science, artificial intelligence, and economics. He has worked on problems in voting, matching, fair division, and learning theory, and his research has been published in top journals like Artificial Intelligence (AIJ) and premier theory and AI conferences such as EC, SODA, AAAI, IJCAI, and NeurIPS among others. In addition, he is a recipient of Prof. R Narasimhan postdoctoral award at TIFR and a best paper award nomination at AAMAS 2018.