



Project Proposal for Ph.D.

Project Details	
Project Title	Computational Social Choice
Project Summary	This is an interdisciplinary project at the intersection of economics and computer science that brings together ideas from game theory, mechanism design, and algorithm design. The primary focus of this project is to investigate problems in <i>social choice theory</i>, which is a classical area of economics concerned with decision-making based on the conflicting preferences of multiple agents, from a computational perspective. The aim is to identify desirable economic properties and devise efficient algorithms to achieve them. Example problems include voting, matching, and fair division.

Ph.D. Supervisors			
Role	Name of Faculty	Academic Unit in IITD/Institute/University	Email ID (Official)
Supervisor 1	Saptarshi Mukherjee	HUSS	saptarshi@hss.iitd.ac.in
Supervisor 2	Rohit Vaish	CSE	rvaish@iitd.ac.in

Project requirements (Student qualifications, experience required, etc) *The candidate will be shortlisted based on common shortlisting criteria decided by ScRC (SIRe)
- Mandatory: Discrete Mathematics (or equivalent course). The candidate should be comfortable with reading and writing mathematical proofs. - Recommended: Prior experience in Game Theory, Microeconomics, and Design and Analysis of Algorithms is recommended but not mandatory.

Source of fellowship/funding (CSIR/UGC/DBT/ICMR/ICAR/NEET-PG/DST-INSPIRE/IRD/FITT Project details, if any)
DST INSPIRE grant (DST/INSPIRE/04/2020/000107)

Role of Faculty Members involved:	
Supervisor-1	Saptarshi Mukherjee will supervise the economics side of the project through his expertise in microeconomic theory, game theory, and mechanism design.
Supervisor-2	Rohit Vaish will supervise the computer science side of the project through his expertise in algorithm design.