Candidate Profile at a Glance – Swaprava Nath

Current Affiliation	Assistant Professor, Department of Computer Science and Engineering Indian Institute of Technology Bombay, 2021 – till date
Previous Affiliations	Assistant Professor, Department of Computer Science and Engineering Indian Institute of Technology Kanpur, 2017 – 2021 Fulbright-Nehru Postdoctoral Fellow, Carnegie Mellon University, 2015 – 2017 Lecturer and Post-Doc, Indian Statistical Institute, New Delhi, 2013 – 2015 PhD Candidate, Computer Science and Automation, Indian Institute of Science, Bangalore, 2009 – 2013
PhD Thesis Title	Mechanism Design for Strategic Crowdsourcing
Research Interests	Game theory, mechanism design, artificial intelligence, multi-agent systems, computational social choice, crowdsourcing, social networks
Publication Profile	Journals: 12 (Management Science, Games and Econ Behav, JAIR, ACM TEAC, Math programming, Transportation Res. E, ACM TOSN, Rev of Econ Des, Econ Letters) **(8 in the present position)** Peer-reviewed Conferences: 29 (IJCAI, AAAI, AAMAS, HRI, WINE, WWW) **(16 in the present position)** Working papers: 5 **Total citations: 654, h-index: 10** (source: Google Scholar)
Research Abstract	My research lies in the intersection of microeconomics and computer science. In particular, I work on the theory and applications of mechanism design that actively involve computational science as a tool of analysis and the Internet as a method of implementation. My research has two complementary themes: one provides solutions to combat the strategic behavior of the multiple rational and intelligent agents or systems in these applications, and the other theme uses artificial intelligence to assist humans take provably efficient decisions. We model the strategic behavior using a game theoretic framework and provide mechanism design solutions that are provably efficient and stable. On the other hand, we use a computational framework to analyze the performance of the system quantitatively. The connection between these two analysis techniques gives rise to many interesting questions and elegant solutions in the versatile domain of multi-agent systems.
Research Collaborators	*Y. Narahari* (PhD thesis advisor, IISc Bangalore), *Arunava Sen* (Professor, Indian Statistical Institute, New Delhi), *Ariel Procaccia* (Professor, Harvard University), *Ioannis Caragiannis* (Professor, Aarhus University), *Tuomas Sandholm* (Professor, Carnegie Mellon University)
Awards and Achievements	Discussion Master award for serving as a reviewer in ECAI 2023. Only 83 reviewers (out of over 700 reviewers with at least 4 reviews) received this award. Senate commendation for **teaching excellence** in the course "CS711: Introduction to Game Theory and Mechanism Design" taught in the 2020-21-I semester, IIT Kanpur. Our solution *Satyanweshi*, a truth-seeking chatbot, secured the second place in MHRD AICTE Samadhan online challenge in response to COVID-19, 2020. *Fulbright-Nehru Postdoctoral Fellowship*, 2015 – 17 *Honorable Mention in Yahoo! Key Scientific Challenges Program*, 2012 *Intern Day Prize*, 2010, at Xerox Research Centre Europe, France *Tata Consultancy Services PhD Fellowship*, 2010 GATE 2006: *All India Rank 34* (stream: EC) Rank in Undergraduate University: *2 (Bronze medal)* WBJEE 2002: *State Level Rank 25 (Engineering)* 10+2 School Leaving Exam: *State Level Rank 28*
Teaching Experience	2 newly developed courses taught at IIT Bombay, 4 full (including 2 newly developed) courses taught at IIT Kanpur, 1 full and 1 co-taught course at Indian Statistical Institute, New Delhi.
Teaching Outreach	A new NPTEL course: Introduction to Game Theory and Mechanism Design with 1433 registrations (Fall 2022).
Graduate Advising	1 fully advised and 1 co-advised PhD **graduated**, 3 Masters student graduated.
External Sponsored Projects	**7** (Funding agencies: Science and Engineering Research Board, Technocraft Center for Applied Artificial Intelligence, Tata Consultancy Services, Amazon, IITB Trust Lab, SBI, Dr. Gauri Shah)
Tools Developed	**3** software tools developed for social applications (Satyanweshi, Doori, SwaGrader). Details in CV.
Other Services	Organizer, Computational Social Choice Theory Workshop (part of the conference Foundations of Software Technology and Theoretical Computer Science (FSTTCS), 2017), IIT Kanpur. Program committee and reviewing service: AAAI 2020, 2021, 2022, IJCAI 2016, 2017, 2018, 2021, 2022, Web and Internet Economics (WINE), 2012, 2015, 2017, ACM EC 2018, 2020, Computational Social Choice (COMSOC), 2016, Mathematical Social Science, 2015.
Industry Experience	Software engineer in Cisco Systems (India) Private Limited, 2008 - 09

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