

GOGULAPATI SREEDURGA

Room no 580, New Girls Hostel, IISc Bengaluru - 560012

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EDUCATION

Indian Institute of Science, Bangalore

Direct Ph.D., Game Theory Lab,
Department of Computer Science and Automation.

August 2018 - Present

Current CGPA: 8.2

Indian Institute of Information Technology, Jabalpur

B.Tech (Gold Medalist), Computer Science and Engineering.

July 2014 - July 2018

Overall CGPA: 9.2

FIITJEE, Vijayawada

Class 12th.

June 2012 - June 2014

Overall Percentage: 96.6%

Nalanda Vidya Niketan, Vijayawada

Class 10th.

May 2011 - May 2012

Overall CGPA: 9.8

COURSES

IISc: Stochastic Models and Applications, Linear Algebra, Game Theory and Mechanism Design, Algorithmic Game Theory, Design and Analysis of Algorithms, Approximation Algorithms, Graph Theory, Computational Complexity Theory.

IIIT: Machine Learning, Deep Learning, Algorithms, Discrete and Continuous Mathematics, Linear Algebra.

RESEARCH AND PUBLICATIONS

My research area is Computational Social Choice and Multi-agent Systems. More specifically, I am interested in Participatory Budgeting (i.e., designing ways to fairly distribute a common resource among a few projects, after aggregating the preferences of the stakeholders). Below are a few problems:

- **Maxmin Participatory Budgeting** (Primary Author; Accepted for long oral presentation at IJCAI)
We proposed a novel fair approval-based participatory budgeting rule that achieves diversity and gave several computational and axiomatic results.
- **Characterization of Group-Fair Randomised Social Choice Rules under Single-Peaked Preferences** (Recommended to submit at Journal of Mathematical Economics; Drafting in progress)
We consider the scenarios where agents are partitioned into groups and define three fairness notions for divisible PB under single-peaked preferences that envelop many existing notions for the setting. We gave complete characterization of unanimous and strategy-proof fair rules.
- **Indivisible Participatory Budgeting under Weak Ordinal Preferences** Indivisible Participatory Budgeting under Weak Ordinal Preferences (Primary Author; Under revision)
We proposed three families of rules for fair indivisible PB under weak ordinal preferences. We proved that each of these families satisfies compelling computational and axiomatic properties.
- **Random Object Assignment** (Primary Author; Work in progress)
WE characterize the Pareto-efficient, strategy-proof and individually rational random assignment rules when every agent is endowed initially with exactly one object.

In addition to the above, two works on participatory budgeting and social choice are in progress. I'm also looking forward to getting a broader exposure so that I can expand my domain.

ACADEMIC ACHIEVEMENTS

Subreviewer - WINE 2020, 2021

Best Poster Award at ACM Summer School on Algorithmic Game Theory at IITGN, 2019

Selected for the Prime Minister Research Fellowship (PMRF) and got an admission into Direct PhD, CSA in IISc funded by this fellowship

Gold Medalist (Topper of all disciplines) in Undergrad.

Secured AIR 118 in GATE 2018.

Selected for the prestigious JENESYS program 2016 designed for youth exchange between India and Japan on behalf of India and went for a two week long programme in Japan as an Indian delegate.

Received Certificate of Appreciation and a merit scholarship for Academic Excellence from Govt. of India in the years 2015,16,17 and 18.

Stood second in the state for class 10 board exams and one in the top 5 of the city and district in class 12th board exams.

ROLES AND TEACHING EXPERIENCE

Dayanand Sagar University, Bangalore

Apr 22nd - May 5th 2022

Visiting Faculty

Conducted a workshop on Research Writing for B.Tech. students at DSU.

Dayanand Sagar University, Bangalore

Nov 9th - Nov 11th 2021

Visiting Faculty

Conducted a workshop on Basics of Game Theory for B.Tech. students at DSU.

IISc Bangalore

March - June 2021

Teaching Assistant

TA for two courses: Data Structures and Algorithms and Game Theory and Mechanism Design in CSA department, IISc.

Dayanand Sagar University, Bangalore

Feb 6th - Feb 20th 2021

Visiting Faculty

Conducted a workshop on Algorithmic Game Theory for B.Tech. and M.Tech. students at DSU.

IISc Bangalore

Jan - July 2020

Teaching Assistant

TA for the Game Theory and Mechanism Design course in CSA department, IISc.

MSRIT

Jan 2020

Speaker

Took lectures in the Faculty Development Program (FDP) on the 'Applications of optimization techniques and number theory in engineering sciences' for the faculty of various institutes in Karnataka.

ICTS - TIFR

May 2020

Speaker

Taught a course on Game Theory and Mechanism Design in the ICTS workshop on Dynamics of Complex Systems.

Internship in Natural Language Processing under Dr.Manish Shrivastava.

Secured All India 13th rank in NCAT Olympiad conducted by IITs and IISc together and participated in a workshop in IITD.

PROJECTS

Sentence Reordering for Statistical and Neural Machine Translation

The project aims to try various approaches that include cross value calculation, statistical measures and more to reorder the source sentence according to the structure of target sentence and figure out how this prior reordering would affect machine translation process. We found out that the Neural Machine Translation gave better results after cross value calculations.

Welfare Theorems for Algorithm Design

The work of approximating Fisher markets to a nearby Fisher market that admits integral Fisher equilibria has been done by performing some small perturbations in the budgets of the buyers. This project tries to extend this result to the Exchange Economies and Walrasian equilibria.

Nature Inspired Algorithms

The project aims to study the Nature Inspired Algorithms and their use to solve Travelling Salesman Problem. Submitted my report on how to use Particle Swarm Optimization to solve the problem and implemented it in JAVA.

Development of Software for Online Tendering System

Worked on developing a Software for automating and managing Online Tendering Process of IIIT Jabalpur. Laravel was used as the framework for Coding. I was the team leader of this project.

IOT Based Garbage Monitoring System

To extend supporting hand for Clean India, We developed an Internet of Things based Garbage Monitoring System. Technologies like OpenGL and GLUT were used for the Graphics interface and Arduino Microcontroller Programming was used to program IR Sensor. I functioned as the team leader of this project.

Development of Wholesale Management System

We developed a Database Management system for Wholesale Organization with MySQL, PHP, HTML, CSS, Javascript. I functioned as the team leader of this project too.

Simulation and comparison of Queue Scheduling Algorithms

We used ns2 to implement scheduling algorithms like TCP RED, D/D/1 and Round Robin.

TECHNICAL TOOLS

Languages	C, Java, Python, PHP, HTML and CSS
Databases	MySQL, Microsoft SQL, Oracle
Software & Tools	MS Office, LaTeX, Laravel

EXTRA-CIRRICULAR

Completed Diploma in light music from Telugu University with distinction (83%) in 2018.

Secured All India 13th rank in National Creativity and Aptitude Test conducted by few IITs and IISc and was selected for a one week workshop on Creativity in IIT Delhi.

Won a Gold medal in AP Statewide Eduranet Olympiad for Communication and Presentation Skills and a Silver medal for Analytical and Problem Solving Skills in the year 2011.

Won a Silver medal in AP Statewide Eduranet Olympiad for Communication and Presentation Skills and a Bronze medal for Leadership and Social skills in the year 2012.

Served as the coordinator of music club at IIIT Jabalpur from August 2016 - August 2017 and conducted various events at cultural and Inter IIIT Techno-cultural fests.

Served as an Assistant Coordinator (Aug 2016-17) and Student Guide (Aug 2015-16) in the student counselling committee in IIITDMJ.

Served as a voluntary teacher (2014-18) in the Jagriti Organisation that teaches the under-privileged kids from slums.