

GOKUL P BHARATHAN

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EDUCATION **Indian Institute of Science Education and Research Mohali** Mohali, India
BS-MS in Physics 2023 - 2028 (*expected*)
• GPA: 8.8/10

RESEARCH INTERESTS Formation and Evolution Of Galaxies, Dynamical Systems, Modelling Complex Systems, Machine Learning Techniques In Astronomy

PROJECTS **VigilAI** 12/2025 - 1/2026
Personal Project
• Developed an edge-AI model for predicting stampede using a Raspberry Pi 5. Created a novel method of stampede prediction using strain and energy instead of traditional entropy based methods.

Evolution Of Spiral Arm Structures In Galaxies Through Cellular Automata 2026
IISER Mohali
• Explored how cellular automata can be used for explaining the spiral arm structure of galaxies.
• Created as part of IDC621: Modelling Complex Systems course

Insight 09/2023 - Present
Indian Institute of Science Education and Research Mohali
• Working as part of the team who builds and maintains the official app of my institute Indian Institute of Science Education and Research Mohali.

Passafe 2022
Personal Project
• A tool to manage passwords for *nix systems. This project has more than 5200 downloads as of January 2026.

INTERNSHIPS **Indian Institute Of Astrophysics** | Bangalore, India 05/2024 - 07/2024
• Developed a pipeline for unravelling Lyman α emission from quasars via broadband continuum subtraction techniques on g , r , i band images from Hyper Suprime-Cam Subaru Strategic Program Public Data Release 3 Images.
• Developed a pipeline for estimating the photometric redshifts of galaxies using photometric data from JWST, HST and Hyper Suprime-Cam Subaru Strategic Program.

Indian Institute of Astrophysics | Bangalore, India 06/2025 - 08/2025
• Developed a pipeline to unravel Lyman α and MgII emissions from quasars in the DESI survey and study their properties.
• Analysed the Lyman α halo properties with radio properties of the host Supermassive Black Hole (SMBH).

AWARDS AND HONORS • **INSPIRE-SHE Scholar**, Department of Science and Technology India 2023
• **Third Prize**, Maze Solver Competition at IIT (BHU) Varanasi 03/2024
• **Third Prize**, AI For Everyone Pre-Summit Event of Excellence in AI Summit India 01/2026
• **Award Of Merit**, AISSCE 2026

SKILLS	Languages: English, Malayalam, Hindi Programming: Python, Julia, Rust, C, C++ Tools: TOPCAT, DS9, CARTA, WaLSA (Wave Analysis Tools), Vim, Typst, Latex, Shell Scripting
ONLINE COURSES & WORKSHOPS	1. Data Driven Astronomy , University of Sydney (Coursera) 2. Julia Scientific Computing , University of Cape Town (Coursera) 3. Mathematical Foundation Of Machine Learning , Indian Institute of Science, (NPTEL) 4. Gravitational Wave Open Data Workshop
SERVICE & GOVERNANCE	• Convenor, Turing Club Indian Institute of Science Education and Research Mohali • Student Run Mess Council Member
TALKS GIVEN	• Just Git It:- An introductory talk on Git and Github • IDC101 Help Sessions:- Help sessions for the introduction to programming course at Indian Institute of Science Education and Research Mohali