

Resume

Name	Manmode Gaurav Hariram						
DOB	-	Age	-	Sex	Male	Nationality	Indian
Email	gauravmanmode@gmail.com			Phone	-		
Address	-						

Education		From	To
High School	Jawahar Navodaya Vidyalaya, Wardha	July 2016	April 2018
University	Fergusson College Pune, Bachelor of Science in Mathematics	July 2019	May 2022
University	National Institute of Technology Warangal, Master of Science in Mathematics and Scientific Computing	August 2023	May 2025

Certifications

Ordinary Driver's License
Japanese Language Proficiency Test (JLPT) N1

Technical / Volunteer Experience

Hobbies: programming, reading, and cycling.

Volunteer Work

Volunteered in a graduate-level project in the Department of Electronic Engineering (3 months)
Member of a university volunteer organization (1 year)

Skills

Programming	Experience with Python, Java, R, Fortran (coursework), C (self-taught), and cryptography (coursework).
Projects	Developed custom firmware for an 8-bit keyboard using C and SDCC Built a personal portfolio website using HTML, CSS, and JavaScript

Thesis

Theme	Numerical Solution of Fifth-Order Linear Boundary Value Problems Using the Galerkin Method with Quartic B-Splines
Details	Solved general fifth-order linear boundary value problems with special boundary conditions using the Galerkin finite element method with quartic B-splines as basis functions. To handle Dirichlet boundary conditions, the basis functions were redefined appropriately. The numerical results were compared with existing analytical solutions for validation. The implementation was carried out in Fortran and Python. Code link : https://github.com/gauravmanmode/sharing/tree/main/project_work

Intenship

Theme	Google Summer of Code – optimagic (NumFocus)
Details	From March to October 2025, I participated as an intern in the open-source optimization library optimagic (NumFocus). The goal of this project is to provide a unified Python API that allows optimization algorithms implemented in different languages and packages to be used in a consistent manner. My main responsibilities included researching and integrating various optimization algorithms, and unifying parameter names while preserving the original meaning and behavior of each algorithm. I also conducted performance comparisons and benchmarking with default settings to make it easier for users to select and tune appropriate optimization methods. During development, I used Python, C++, NumPy, and pytest. Code quality was ensured through static typing with mypy and the use of linters. For breaking changes, I added tests to maintain stability and focused on sustainable, continuous development. Blog link: https://gauravmanmode.github.io/gsoc_2025_blog/report

Volunteer

I built a Docker-based inference environment for an image classification model on NVIDIA Jetson AGX Orin, using official NVIDIA images to avoid CUDA / cuDNN dependency conflicts. I addressed shared memory (/dev/shm) issues by adjusting Docker settings, DataLoader behavior, and batch sizes, and validated stable GPU inference across multiple Jetson power modes (nvpmodel).
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Key focus areas during my student years

I have loved mathematics since high school and was an active member of the math club, where I also received a national-level award. After entering university, I made it a point to participate in activities that interested me, and I volunteered in various initiatives within the Department of Computer Science. In graduate school, I joined a project in the Department of Electronic Engineering and had the opportunity to support a research team in preparing and presenting academic papers. I am the type of person who commits fully to what genuinely interests me, and I value actively learning and engaging across disciplines.
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