

GAUTAM SIVAKUMAR

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<https://gautams-portfolio.vercel.app/>

Education

National Institute of Technology, Karnataka, Surathkal

July 2022 – May 2026

Bachelor of Technology in Electronics and Communications, Minor in Mathematics

Surathkal, Karnataka

Relevant Coursework

- Data Structures
- Computer Architecture
- Linear Algebra
- Digital System Design
- C Programming
- Machine Learning
- Microprocessors
- Probability Theory

Experience

NITK Winter of Code

November 2023 – Present

Open Source Contributor

Remote

- Developed a Golang HTTP server for HTTP/1.1 over TCP, providing a downloadable package similar to net/http with essential HTTP features.
- Utilized Go's net/http package for parsing HTTP messages and handling requests, employing a multi-threaded architecture with listening and worker threads.
- Implemented TCP server logic, manipulated request/response data, and supported body parameters, including connection keep-alive, redirection, and concurrent request handling.
- Extended functionalities to include compressed data handling, cookie management, TLS protocol support, and addressed HTTP caching and static file delivery, validating through a dedicated test program.

Projects

🔗 [Threaded Distributed File System](#) | C++, Multi-threading, Distributed Systems

October 2023

- Implemented a distributed file system using C++ with causal consistency and threaded operations.
- Simulated multi-threaded client processes, each performing operations on distinct files.
- Used vector clocks to timestamp thread operations and ensure causal consistency.
- Implemented communication using TCP sockets and RPCs, and implemented snapshotting with the Chandy-Lamport algorithm for a comprehensive file system overview.

🔗 [Portfolio Website](#) | React, Typescript, Tailwind CSS

December 2023

- Developed a portfolio website with light and dark mode options for improved user experience.
- Leveraged the Framer Motion library to introduce fluid motion effects and seamlessly integrated the React.email library for effective email communication.
- Ensured cross-device compatibility and optimal viewing by implementing a fully responsive website.

🔗 [Club Event Manager](#) | Ruby on Rails, mySQL

November 2022

- Developed an application catering to college students for streamlined tracking of club events.
- Implemented a SQL database for club admins to publish and users to subscribe to events, with automatic updates reflected in Google Calendar.
- Implemented interactions with REST APIs through HTTP calls, and ensured transparent updates from admins to all users.

Technical Skills

Languages: C, C++, Python, Java, HTML/CSS, JavaScript

Developer Tools: VS Code, Eclipse, Pycharm, Google Cloud Platform

Technologies/Frameworks: GitHub, React, NodeJS, NumPy, OpenCV

Leadership / Extracurricular

Competitive Programming

June 2022 – Present

Participant

Online Platforms

- Regularly participate in online coding competitions on platforms like CodeForces, CodeChef and LeetCode.
- Achieved a rating of **1101** on [CodeForces](#), **1491** on [CodeChef](#), and solved **120+** problems on [LeetCode](#).

IET NITK

October 2022 – Present

Executive Member

IET NITK

- Managed an executive board of 20+ members and ran weekly meetings to oversee progress in essential parts of the club.
- Led the club of 50+ members to work towards goals that improve and promote community service, academics, and unity.