

Arnav Gupta

✉ arnvgpta95@gmail.com in Arnav Gupta 🌐 <https://github.com/Arna03v> 📞 9353172919

🎓 Education

BITS Pilani, K.K. Birla Goa Campus

Oct 2021 – Aug 2025 | India

B.E. (Hons.) Computer Science

Relevant coursework: Data Storage Technologies and Networks, Operating Systems, Data Structures and Algorithms, Computer Networks, Database Systems, Object Oriented Programming, Microprocessors and Interfacing

Narayana Co-Kaveri Bhavan

2019 – 2021 | India

High School | 95.6% in CBSE XII Boards

Delhi Public School Bangalore East

2017 – 2019 | India

High School | 96.2% in CBSE X Boards

💼 Professional Experience

Flamingoes Technologies Inc.

May 2023 – Jul 2023 | Bangalore, India

Full-Stack Developer Internship | TypeScript, NestJS, MongoDB, React, React-Redux, SwaggerUI

- Developed an efficient admin **authentication & authorization API** using **JWT**, ensuring secure access to sensitive data and functionalities, and also created a **user-friendly UI** for the same
- Significantly enhanced **search functionality** by implementing **data structures**, leading to a remarkable **40%** boost in **search query performance**, which positively impacted **user experience**
- Implemented **real-time data integration** that reduced the time to update the admin dashboard by **50%** to provide **up-to-the-minute insights** and **live updates**, enhancing decision-making processes
- **Documenting** and managing **70+ APIs**, optimizing **communication** between **frontend** and **backend** teams.

🔬 Research Experience

Data, Systems & High Performance Computing (DaSH) Lab

Dec 2023 – present

Undergraduate Researcher | Asynchronous IO, IO_uring, Rust, kernel

- Working under Dr Arnab K. Paul on **asynchronous IO calls** for **key-value stores** for **high performance computing**.

Confluence Lab

May 2023 – Dec 2023

Undergraduate Researcher

- Working under Prof. Kunal Kishore Korgaonkar on **integrating C and Rust** codebases, looking for **performance boosts** and **memory safety guarantees**.

📁 Projects

Data Prefetching for Edge Deep Learning workloads

Aug 2023 – Dec 2023

Apache Kafka, Tensorflow, Distributed Deep Learning,

- Implemented **prefetching** mechanism to reduce **I/O overhead** and **overall training time**.
- Optimised **convergence time** of deep learning training workloads on **edge devices**.
- Using **Apache Kafka** to stream data from a **distributed file system** to compute nodes

Analysis of Performance and Memory Safety for C - Rust Integrations

Aug 2023 – present

C, Rust, Cargo, Cxx

- Performing a case study on the **performance** impact of integrating **RUST** into a **C++** code base using the **GNSS-SDR**
- Worked on **integrating Cargo** into the **existing CMake** build system to allow for **RUST integration**.
- Exploring different integration approaches, and utilizing the **cxx crate** and **RUST Foreign Function Interface**.
- Employed **massif**, **sysbench**, and **valgrind** for comprehensive **memory** and **CPU performance benchmarking**.

🧠 Skills

Languages

C/C++, Rust, TypeScript, MySQL, Node.js

Tools and Frameworks

Git and GitHub, Linux, NestJS, MongoDB, Docker, Docker-compose

Libraries

React, React-Redux, Puppeteer, Tokio

📌 Miscellaneous

Bluelearn Web3 Ideathon winner

Jan 2022 | India

Proposing a real world web3 problem and its solution

Advent of code 📄

2023 – present

Rust

- Sharpening **problem-solving** and **Rust** proficiency through **Advent of Code** challenges.