Abhishek Kumar

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GitHub | LinkedIn | LeetCode

EDUCATION

- **National Institute of Technology Delhi** — New Delhi, India
  B.Tech in Electronics and Communication Engineering; CGPA: 7.85/10.0 — *2021 – 2025*

- **National Institute of Technology Delhi** — New Delhi, India
  Minor in AI/ML; CGPA: 8.22/10.0 — *2021 – 2025*

EXPERIENCE

- **Oracle** — Bengaluru, India
  Software Development Engineer 1 — *July 2025 – Present*
  - **SBC Sizing Tool**: Engineered an extrapolation system using FastAPI and Oracle SQL to predict hardware requirements (CPU, cores, memory) for deployments, improving prediction accuracy by 30%.
  - **MCP Automation**: Designed internal tools to streamline testing workflows, perform root cause analysis, and parse logs automatically, reducing debugging time by 40%.
  - **Performance Optimization**: Collaborated with a team of 10 to enhance Session Border Controller (SBC) performance by optimizing compute utilization and reducing response latency under high-load conditions by 3%.

- **Oracle** — Bengaluru, India
  Software Development Intern — *Jan 2025 – July 2025*
  - **Cloud-based SBC Tool**: Developed a FastAPI backend with Oracle SQL database to predict resource requirements by extrapolating datapoints; deployed on Oracle Cloud.
  - **Code Security**: Improved code security by eliminating 1,000+ instances of unsafe C/C++ functions, reducing buffer overflow and memory corruption risks.

- **Google Summer of Code (SymPy)** — Remote
  Open Source Contributor — *May 2024 – Sept 2024*
  - **Control Module Enhancement**: Contributed to SymPy's Control Module, enhancing State Space and Transfer Function classes with symbolic plotting and system interconnections (Series, Parallel, Feedback).
  - **Code Contributions**: Merged 11+ PRs with 3,000+ lines of code, 100+ unit tests, and comprehensive documentation, improving reliability for the open-source control systems community.

PROJECTS

- **CacheIt**: High-performance in-memory caching server in C++ with epoll and multithreading, supporting core data types (HashMap, Set, Sorted Set) and LRU/LFU eviction policies. Achieved 0.21ms avg latency and 99.99% success rate under load. GitHub · Docker Hub
- **Fermat MCP**: FastMCP server for advanced mathematical computations with NumPy, SymPy, and Matplotlib integration, enabling 50+ operations across calculus, algebra, and statistics. GitHub · Smithery MCP

TECHNICAL SKILLS

- **Languages**: C++, Python, JavaScript/TypeScript, Bash   **Technologies**: Docker, Git, GitHub Actions, Redis, Linux, CI/CD

- **Frameworks**: FastAPI, Express, Next.js, Crow-CPP   **Databases**: PostgreSQL, MongoDB, MySQL, Oracle SQL

- **Libraries**: React, NumPy, SymPy, Matplotlib   **Concepts**: Concurrency, Memory Management, DBMS, Design Patterns

ACHIEVEMENTS

- Selected for **Google Summer of Code (GSoC) 2024**, out of 43,984 applicants from 172 countries (top 0.02%). Contributed 3,000+ lines of code and merged 127 commits to SymPy.

- Open source contributor at **GNOME Foundation**, actively contributing to GNOME/Graphs.

- Solved 600+ LeetCode problems with a 1600+ rating, demonstrating strong problem-solving and algorithmic efficiency.

- Secured rank 32 in the competitive CodeRush coding competition.