

Niranjhan SU

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Education

B.Tech in Computer Science and Engineering (Specialization in Cyber Security)

Aug 2023 - 2027

Shiv Nadar University Chennai, Semesters I-VI

CGPA - **8.617** →

Relevant Coursework: Linear Algebra, Probability & Statistics, Discrete Mathematics, Graph Theory, Calculus & Numerical Methods, Design & Analysis of Algorithms, Randomized Algorithms, Optimization Techniques

Senior Core Member, Cyber Security Vertical, Coding Club

Experience

Software Engineering Intern – PayPal

May 2026 - Aug 2026

- Working on the **design and development of backend systems** in the **crypto team**.
- Built **Java microservices** over **event-driven messaging (ActiveMQ)**, alongside **smart contract development**.

Software Development Intern - Kolz AI (Maheswari Electrical Agency) →

May 2025 - Aug 2025

- Backend Development:** Engineered backend features for a Shopify app, leveraging **PostgreSQL** and **Vapi-AI** for follow-up calls on abandoned checkouts, integrated with **Shopify MCP APIs** for context-based phone calls.
- Automated Messaging Interface:** Developed automations for Instagram and WhatsApp using **browser automation** and **Electron**, reducing manual messaging time by **80%** and projecting **INR 1,00,000 in savings**.
- FastAPI Microservice:** Built a **Python FastAPI** microservice with **99.9% uptime** (testing environment), streamlining product information retrieval for customer support, reducing query resolution time by **60%**, and deployed via **Docker**.

Course Development Intern – FISST Academy →

Jun 2025 - Aug 2025

- Cybersecurity Course Design:** Designed and delivered labs for **two cybersecurity modules** (Blockchain Based Secure Authentication; Analysis and Detection of Ransomware with Machine Learning), totalling **25+ labs** and **40+ hours** of instruction.
- ML Model Serving:** Built **Python** demo models for **live malware analysis** of file-system activity, implementing **ransomware detection systems** achieving high accuracy on **200MB+ malware datasets**.
- Lab Automation:** Automated lab environment setup via shell scripting, reducing setup time by **90%**.

Projects

CourseOffering - Course Allocation System (TypeScript, Next.js, Node.js, PostgreSQL)

- Production System:** Architected and deployed a platform **currently used by Shiv Nadar University Chennai**.
- Preference & Allocation Workflow:** Built a comprehensive system enabling faculty preference submission, dean/admin allocation with priority management, and automated conflict detection with real-time oversight.
- Administrative Dashboard:** Developed admin interface for bulk operations, data export, automated mailing, and more.

ScheduleMaker - Automated Timetable Generator (TypeScript, Next.js, Node.js, PostgreSQL) →

- Constraint Solver:** Engineered an algorithm handling **20+ complex constraints** across students, faculty, halls, and groups with **zero scheduling conflicts** and automated bottleneck detection for constraint resolution.
- Integrated Pipeline:** Developed data flow from the CourseOffering system, enabling direct schedule generation from course allocations.
- Interactive Editor:** Implemented drag-and-drop interface for real-time modifications, lecture swapping/shifting, and break insertion, reducing finalization time by **50%** and overall creation time by **over 90%**.

Clox and Jlox - Lox Language Interpreters (Java, Make, C) →

- Complete Language Interpreters:** Developed from scratch, implementing **Lexers, Parsers, and Compilers**; integrated advanced features including **OOP, closures, lexical scoping, and recursion**.
- Conducted **low-level profiling** with **Valgrind** to identify bottlenecks, improving runtime performance by **over 20%**.

StockLens - NSE Equity Research Platform (Python, FastAPI, PostgreSQL, React) →

- Market Data Pipeline:** Ingests NSE price history via the **ICICI Breeze API** and company fundamentals via **Yahoo Finance** into **PostgreSQL**, on cron-scheduled jobs.
- Time-Series Analytics:** Computes **CAGR, maximum drawdown**, and historical “what-if” investment scenarios over equity price series, served through a **Python FastAPI** backend.
- Fundamentals Screener:** Filters NSE equities on fundamental metrics, with a holdings tracker across demat accounts; deployed on an **Azure VPS** with a documented schema and architecture spec.

Fou - Terminal Text Editor (*C, Make*) →

- Designed a **Vim-like terminal text editor** with comprehensive **undo/redo**, **rapid cursor navigation**, and **multiple editing modes** controllable via both keyboard and mouse.
- Engineered a **custom piece table structure** boosting large-file editing performance by **over 70%**; developed low-level **TTY input handling** using escape sequences for responsive editor control.

Welt - Webnovel Viewer (*Android Studio - Java/Kotlin, Flask, PyQt, BeautifulSoup*) →

- **Multi-Platform Applications:** Designed and deployed **Android and Desktop applications** to automate the **scraping, storage, and organization** of webnovel content across multiple sources.
- **User Optimizations:** Automated chapter downloads, syncing reading progress, and a long-form reading interface.

Traffic Sniffer - Multi-Interface Packet Capture Tool (*Rust*) →

- Captures and parses **Ethernet, IPv4/IPv6, TCP, and UDP** packet headers in real time across all available network interfaces, using one worker thread per interface with a shared, mutex-guarded stop flag for graceful shutdown.
- Logs captured traffic to per-interface **CSV** files for offline analysis.

Technical Skills

Languages: C, C++, Python, Java, Kotlin, TypeScript, JavaScript, Shell Script, Go, Rust

Backend & Frameworks: Flask, Django, FastAPI, Next.js, Node.js, Express.js, Socket.io, PyQt, Playwright, Puppeteer, Selenium, Swing/AWT

Databases: PostgreSQL, MongoDB, SQLite, Redis, Firebase, Supabase

Cloud & DevOps: Azure, Kubernetes, Docker, GitHub Actions, Harness (CI/CD)

Technologies: Git, Make, Android Studio, GDB, Valgrind, LeakCanary, ActiveMQ, GraphQL, Gradle, Shopify

Languages (spoken): English (Professional Working), Tamil (Native), Hindi (Limited Working)

Certifications

Programming in Modern C++ → - Ranked in the **top 5%** of 1749 test takers; covered smart pointers, meta-programming, and advanced OOP in C++23.

Oct 2024 - NPTEL

Social Networks - Learnt network dynamics; simulated human relations as graphs to model and forecast future interactions.

Apr 2024 - NPTEL

Awards and Achievements

ICPC West Asia Regionals 2024 Qualifier - Qualified for the regional competition.

Dec 2024

2nd Place - EnigmaQuest CTF → - CTF competition hosted by the ECE dept of SSN College of Engineering.

Mar 2024

3rd Place - Password CTF 2024 → - 24-hour Jeopardy + Attack-Defence CTF hosted by VIT Chennai's Linux Club.

Jan 2024

Contest Knight - Rating **1853** (Top 10%), **600+** problems solved. →

LeetCode

Top 1-2% Global Ranking on TryHackMe with **100+** rooms solved. →

Mar 2024 - Present

Co-Organised SNUC Hacks - A 36-hour on-site hackathon with **500+** participants.

2024 - 2025

Hackathon Finalist: Envithon 2024 (SNU) - volunteering centralisation app with streak/badge system; Devhouse 2025 (VITC) - FlashLearn AR app.

2024 - 2025

Completed all 50 Challenges in Advent of Code 2024 (C++) →

Advent of Code

Co-organized EditaCTF 2.0 → - offline CTF competition with **100+** participants.

Feb 2025

Club Head - Coding Club, SNU Chennai - Lead the club as one of its heads.

Aug 2023 - Present

Co-founded Team Edita → - a competitive CTF team participating in international cybersecurity competitions.

CTFtime

Open Source Contributor - AnkiDroid → - Fixed memory leaks and a deprecated annotation in a project with **2M+** users; changes passed all CI/CD checks.

Apr 2025 - Present

Built the Website for GLOFeagles Challenge → - event site for finalist shortlisting, winner announcements, and a gallery.

2025 - 2026

Built the Website for SNUC Hostel Hacks → - hackathon homepage for team registration and event details.

2025 - 2026