Vinod Akshat

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Summary

Computer Science undergraduate at NIT Srinagar (Class of 2027) with hands-on experience building scalable systems in Rust, C, and TypeScript. Developed projects like a DNS resolver, memory allocator, and AI-driven messaging app, showcasing strong foundations in systems programming, distributed computing, and secure design. Passionate about Linux, cybersecurity, and contributing to high-impact open-source software.

Education

National Institute of Technology, Srinagar
Bachelor of Technology in Computer Science and Engineering   *Aug 2023 – May 2027*
Relevant Courses: Data Structures and Algorithms, Operating Systems, OOP, Computer Networks, Discrete Math

Experience & Competitions

Software Lead – Mined Hackathon   *2025*
- Built *SmartRoute Optimizer*, an AI-driven delivery planner using Flask, K-Means clustering, and Folium maps for visualization.
- Led a 3-member team, designed scalable system architecture, and deployed API-based clustering logic for real-time delivery route planning.

Web Developer – Techvaganza, NIT Srinagar   *May 2024 – Oct 2024*
- Deployed cross-platform event registration system with Python (Tkinter) and real-time QR verification using QuaggaJS and jsQR.
- Maintained backend for 1000+ users; resolved concurrency bottlenecks under live participant load.

TryHackMe – Cybersecurity Learner   *Ongoing*
- Maintaining a 70+ day streak exploring Linux, enumeration, Nmap, and common web exploits; documenting progress on GitHub.
- Completed Jr Penetration Tester, Nmap, and Common Attacks rooms, applying skills to secure web applications.

Projects

DNS Resolver – Rust GitHub
- Built a lightweight DNS resolver from scratch with UDP sockets, byte-level parsing, and RFC 1035 name compression logic.
- Developed testable modules supporting round-trip serialization and future recursive DNS caching support.

Memory Allocator – C GitHub
- Designed a thread-safe slab allocator for fixed-size memory blocks using pthread mutex and custom free-list management.
- Achieved minimal memory fragmentation and efficient allocation under concurrent execution.

Anonymous Messaging Platform – Next.js, MongoDB GitHub | Live
- Created a secure, anonymous chat app with OTP-based user authentication using Resend and next-auth.
- Integrated Gemini API for AI-based suggestions; designed dashboard with inbox and analytic views.

Grimoire – Systems Toolkit GitHub
- Engineered core systems tools in Rust: Huffman compression, socket clients, B/B+ trees, and LSM-tree database structure.

Playlist Migration Tool – React, Node.js GitHub
- Automated playlist migration between Spotify and YouTube using OAuth2 and public APIs; supported 1000+ tracks per list.

QR Code Scanner – Node.js, MySQL GitHub
- Built an event verification system for live fests; used QuaggaJS for decoding and MySQL for event participation tracking.

Technical Skills

Languages: C, C++, Java, Python, Rust, JavaScript, TypeScript
Frameworks: Next.js, React, Node.js, Express.js, Tailwind, Framer
Tools: Git, Bash, VS Code, Neovim, Vercel, Render
Databases: MongoDB, MySQL, PostgreSQL, Prisma
Systems: Unix/Linux, REST APIs, WebSockets, Concurrency (pthreads), OAuth2
Soft Skills: Leadership, Problem Solving, Team Collaboration

Interests

Systems Programming, Distributed Systems, Security (TryHackMe), AI Agents, Open Source, Creative Writing