

Agamy Rathour

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SUMMARY

Software Developer with proven experience in systems programming, networking, and full-stack web development. Built high-performance Deep Packet Inspection engine in C++ with multi-threaded architecture processing network traffic at scale. Engineered low-latency mouse remapper achieving 95% resource reduction. Delivered measurable impact at Urban Ladder through 60% faster serviceability checks and 35% improved page load times using React and Vue.js. Skilled in full-stack development with Python, FastAPI, Node.js, and AWS cloud infrastructure. Developed ML-powered hospital management system achieving 87% prediction accuracy. Strong foundation in concurrent programming, TCP/IP networking, Win32 API, and low-level systems design. Active problem solver on LeetCode across data structures and algorithms.

EDUCATION

Vellore Institute of Technology

Bachelor of Technology in Computer Science

Vellore, India

Sep 2022 – Sep 2026

TECHNICAL SKILLS

Languages: C/C++, Python, Java, JavaScript, Go, HTML5, CSS3, SQL

Frameworks & Libraries: React, Vue.js, Node.js, Express.js, FastAPI, Vite, Liquid, Scikit-Learn, XGBoost

Networking: Deep Packet Inspection (DPI), TCP/IP Stack, TLS/SSL Handshake, PCAP Analysis, Wireshark, SNI Extraction

Systems Programming: Multi-threading, Concurrent Programming, Win32 API, Raw HID Input, Producer-Consumer Pattern, Consistent Hashing, Flow Tracking, Low-latency services

Databases & Cloud: MongoDB, MySQL, AWS (EC2, S3, RDS, CloudWatch)

Tools & Technologies: Git, GitHub, Mandrill, RESTful APIs, Spring Boot Integration, OOP, DSA

Core Competencies: Full-Stack Development, Systems Programming, Network Analysis, Machine Learning Integration, Performance Optimization

EXPERIENCE

Frontend Developer Intern

May 2025 – Jun 2025

Urban Ladder

Bengaluru, Karnataka, India

- Developed responsive HTML email templates integrated with backend data using Liquid templating engine and Mandrill API, improving email rendering consistency across 10+ email clients and increasing campaign engagement by 25%
- Built and deployed a Pincode Management System using Vue.js and Vite with dynamic API integration, enhancing serviceability checks and reducing manual verification time by 60%
- Collaborated with cross-functional team of 5 developers to debug React-based UI issues during Phase 1 website rollout, reducing error reports by 40% and improving site stability
- Optimized component rendering performance, achieving 35% faster page load times through code splitting and lazy loading implementation

AWS Cloud Intern

Jul 2024 – Aug 2024

Internship Studio

Remote

- Configured and managed AWS EC2 instances, S3 buckets, and RDS databases for scalable cloud infrastructure deployment
- Monitored cloud resources and implemented best practices for security, cost optimization, and performance tuning
- Gained hands-on experience with cloud architecture design and deployment workflows on AWS platform

Web Development Intern

Jun 2024 – Jul 2024

CodSoft

Remote

- Developed a dynamic, responsive portfolio website with HTML, CSS, and JavaScript, increasing visitor engagement by 45% through optimized mobile-first design across all screen sizes
- Implemented UI/UX design and component-based architecture in React, delivering 50% faster load times and smoother interface through optimized state management
- Built multiple frontend applications including React-based To-Do List and YouTube Clone, demonstrating proficiency in modern JavaScript frameworks and responsive design patterns

PROJECTS

High-Performance Deep Packet Inspection (DPI) Engine | *C++, Multi-threading, TCP/IP, TLS/SSL* 2025

- GitHub: github.com/Agamya-123/Deep-Packet-Inspection
- Developed a multi-threaded Deep Packet Inspection engine in C++ capable of L7 protocol analysis and real-time traffic classification for TLS/HTTP/DNS protocols
- Engineered scalable producer-consumer pipeline architecture with Load Balancer and Fast Path worker threads, utilizing consistent hashing (5-tuple) to maintain session state across parallel workers without breaking flow continuity
- Implemented Server Name Indication (SNI) extraction from TLS handshakes, enabling domain-level classification of encrypted traffic (YouTube, Facebook, Google) without decryption
- Built rule-based blocking engine allowing granular filtering of specific IPs, applications, and domain substrings with stateful flow tracking monitoring session durations, packet counts, and byte volumes

Nexus Ultra – High-Performance Mouse Remapper | *C++, Win32 API, JavaScript, HTTP/REST* 2025

- GitHub: github.com/Agamya-123/Custom-Mouse-Remapper
- Engineered a low-latency remapping service in C++ that intercepts and overrides Raw HID Input for non-driver supported gaming peripherals
- Optimized memory footprint to 8MB RAM, achieving a 95% reduction in resource usage compared to industry-standard drivers (Logitech G-Hub/Razer Synapse)
- Implemented a custom Macro Engine supporting complex key sequences and millisecond-accurate playback using Windows SendInput virtualization
- Developed a cross-language communication layer using an embedded status server to allow a web-based frontend to manipulate real-time system configuration

Hospital Management & Prediction System | *React.js, FastAPI, MongoDB, XGBoost, Scikit-Learn* 2024

- GitHub: github.com/Agamya-123/LOS-Prediction-and-resource-optimization-system
- Engineered full-stack hospital management application with React.js frontend and FastAPI backend to streamline patient admissions and real-time bed allocation, reducing admission processing time by 40%
- Deployed end-to-end ML pipeline using XGBoost to predict patient Length of Stay with 87% ROC-AUC accuracy, optimizing resource utilization and improving discharge planning efficiency by 30%
- Implemented MongoDB database with microservices REST API architecture handling 1000+ patient records with sub-100ms query response times

Pincode Management Dashboard | *Vue.js, Vite, REST APIs, Spring Boot Integration* 2024

- GitHub: github.com/Agamya-123/Project
- Developed feature-rich logistics rules management platform enabling dynamic delivery rule configuration (minimum order values, serviceability) based on pincode regions
- Integrated real-time search with inline editing capabilities and pagination, allowing seamless user interaction without page reloads using Vue.js reactive components
- Designed modern glassmorphism UI with animated loaders and modals, structured with scalable architecture for Spring Boot backend integration using mock and live API toggle

ACHIEVEMENTS & CERTIFICATIONS

Competitive Programming & Challenges: Active problem solver on LeetCode and coding platforms
Participated in Common Internship Test, Tata Imagination Challenge 2023, and TATA Crucible Campus Quiz 2024
Participated in Asian Paints - The Mosaic 2023 and Namma Yatri Open Mobility Challenge, demonstrating innovation and problem-solving skills

LANGUAGES

Spoken Languages: English (Fluent), Hindi (Native), Spanish (Basic)