

Justin Varghese

Computer Science and Engineering Student

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Professional Summary

Computer Science student with experience building real-time distributed systems, backend services, and AI-driven applications. Passionate about turning ideas into scalable software solutions. Experienced in Agile development methodologies, delivering features in two-week sprints. Strong foundation in object-oriented programming (OOP), API integration, and applying modern tech stacks to develop efficient, production-ready projects.

Technical Skills

- **Programming Languages:** Java, Python, C, JavaScript, TypeScript, Kotlin, Dart
- **Frameworks & Libraries:** Node.js, React, Flutter, Jetpack Compose, Docker, Kubernetes
- **Databases & Tools:** PostgreSQL, SQLite, Supabase, Git, GitHub, REST APIs, WebSockets, OSRM, AWS, CI/CD
- **Core Strengths:** Data Structures & Algorithms (DSA), Object-Oriented Programming (OOP), Backend Development, System Design, Agile / Scrum, Test-Driven Development

Professional Experience

Software Development Intern | *Nxtlogic Software Solutions, Coimbatore*

June 2025 – Aug 2025

- Developed and integrated scalable RESTful APIs that reduced data retrieval time by 30%.
- Led requirement analysis, debugging, and system testing, accelerating release cycles by 15%.
- Set up a CI/CD pipeline with GitHub Actions, reducing release time from days to hours.
- Applied software engineering best practices including modular code design and version control using Git.

Projects

Equinox | Ride-Hailing Ecosystem | GitHub

Dec 2025 – Apr 2026

Node.js | WebSockets | Supabase | Flutter | OSRM | Docker | AWS

- **Context:** Recognized that traditional ride-hailing dispatch systems struggle with high latency and rely heavily on expensive, rate-limited third-party routing APIs.
- **Architecture:** Designed and built an event-driven backend with Node.js and WebSockets, achieving sub-second latency for rider-driver communication.
- **Routing Integration:** Integrated the open-source OSRM routing engine directly into the backend, bypassing paid API dependencies and saving an estimated \$500/month in API costs.
- **Deployment:** Containerized the Equinox backend using Docker, simplifying deployment and scaling, and deployed the microservices to AWS Elastic Beanstalk for 99.9% high availability.
- **Database & State:** Built a robust PostgreSQL architecture via Supabase to securely manage authentication and process over 1,000+ simulated concurrent ride states.
- **User Experience:** Created real-time driver tracking features utilizing location interpolation algorithms, increasing map visualization smoothness by 40%.

Developer Knowledge Engine | GitHub

Sep 2025 – Nov 2025

Python | LLMs | NetworkX | SQLite | GitHub API

- **Context:** Identified that developer knowledge is often fragmented across multiple unstructured markdown files, increasing team onboarding times.
- **Data Pipeline:** Built a Python-based ETL pipeline to automatically scrape, clean, and standardize 50+ unstructured documentation repositories utilizing the GitHub API.
- **AI Processing:** Used OpenAI Large Language Models to systematically read documentation, extracting over 500 key technical entities, design patterns, and relational dependencies.
- **Graph Construction:** Created an interactive, localized knowledge graph using NetworkX, converting raw text into a queryable SQLite database and reducing search times by 60%.

- **Context:** Observed that standard static code analyzers lack contextual understanding, while manual code reviews take an average of 2+ hours per pull request.
- **Architecture:** Built a full-stack code analysis platform processing thousands of lines of code dynamically to evaluate repository quality and enforce structural best practices.
- **AI Integration:** Integrated the Gemini API to act as an automated code reviewer, analyzing 100+ repository files and reducing manual review time by 40%.
- **Token Optimization:** Optimized the data payload sent to the LLM by filtering out unnecessary boilerplate, decreasing API token consumption by 25%.

- **Context:** Noted that existing budget applications rely on delayed cloud synchronizations, failing to intercept transactions in real-time to prevent impulse spending.
- **Mobile Architecture:** Created a native, fully offline Android application in Kotlin designed to parse and interpret incoming bank SMS alerts in under 500 milliseconds.
- **Classification Engine:** Built an intelligent, rule-based classification engine utilizing Room DB to categorize 100% of local financial transactions without relying on cloud processing.
- **Behavioral Intervention:** Developed a "Reflection" overlay mechanism that triggers immediately upon transactions over \$50, enforcing a mandatory pause to decrease impulse purchases.

Volunteer Experience & Leadership

- **NSS Captain & Event Organizer** *2022 – 2024*
Organized community tech-workshops for 200+ participants and directed "Brain Teasers," a college technical event focusing on logic and reasoning for engineering students.
- **School Pupil Leader & JRC Captain** *2021*
Coordinated school-wide student activities and managed logistics teams for major campus events.

Education

- **B.E. Computer Science and Engineering**, Dr. N.G.P Institute of Technology *Expected May 2026*
CGPA: 8.6 (till 6th Sem)
- **HSC (12th Grade)**, Sacred Heart M.H.S.S, Kayyuni | 83% *March 2023*
- **SSLC (10th Grade)**, Sacred Heart M.H.S.S, Kayyuni | Pass *March 2021*

Achievements & Personal Details

- **Hackathons:** Completed 24hr Hackathon (KPR Institute) & 36hr Cybersecurity Hackathon (K.S. Rangasamy College).
- **Awards:** Winner, Intra-college Idea Presentation Competition; Technical Paper Presenter, Hindusthan College.
- **Languages:** English (Professional), Malayalam (Native), Hindi, Tamil.