

# Cyril Melvin Vincent

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## Education

### North Carolina State University

Master of Computer Science

May 2026

4.00/4.00 GPA

**Coursework:** Software Engineering, Algorithms, Neural Networks, Software Security, Game Engine Foundations

### Anna University

Bachelor of Engineering in Computer Science

May 2024

8.53/10.00 GPA

**Coursework:** Data Structures, Operating Systems, Compilers, Database Systems, Cloud Computing, Intro to AI and ML

## Technical Skills

**Programming Languages:** Python, Java, TypeScript, JavaScript, HTML, CSS, SQL, Bash, MATLAB

**Technologies:** Spring Boot, Node.js, Docker, PostgreSQL, Redis, GitHub, AWS, React, Next.js, Cloudflare, Git, Linux

## Experience

### MathWorks

May 2025 - August 2025

Software Engineer Intern | Node.js, Vue.js, MySQL

Natick, MA

- Built a cursor-based pagination API with dynamic filters and sorting, reducing query time from **300ms to 5ms** per page
- Modernized a legacy application, significantly improving maintainability and performance for 3000+ engineers globally
- Optimized page load times via code splitting, caching strategies, and reduced reliance on third-party libraries

### Rocketlane

January 2024 - June 2024

Software Engineer Intern | Spring Boot, React.js, Java, TypeScript, PostgreSQL

Chennai, India

- Created a custom Log4j wrapper to sanitize user inputs, achieving a **92.5% reduction** in security vulnerabilities
- Designed and launched an in-app G2 review popup, resulting in a **40% increase** in user reviews within 2 weeks
- Implemented CalVer versioning using GitHub Actions and Datadog to seamlessly track 10+ deployments per day

### Rocketlane

June 2023 - August 2023

Software Engineer Intern | Spring Boot, React.js, Java, TypeScript

Chennai, India

- Optimized CI/CD pipeline with branch merge rules linked to the ticketing system, validating **50+ PR merges daily**
- Established account flags to control external data transmission, ensuring HIPAA compliance for 10+ enterprise clients
- Deployed internal endpoints to automate data requests using Retool, reducing support request **resolution time by  $\approx 80\%$**

## Projects

**Invite Management Discord Bot** | Node.js, Docker, PostgreSQL, Rust, Redis, React.js

- Currently serving over **50 million users** across **100K** Discord groups by tracking over **1 million** unique invite links
- Developed a Discord bot to manage server invites, track invite links, featuring 35+ useful utility commands
- Achieved **99.95% uptime** for the Discord bot, limiting total downtime to under 4 hours in 2024
- Enhanced bot scalability via multi-cluster sharding, enabling each shard to manage  $\approx 1500$  Discord groups efficiently
- Introduced a white-label system for the bot, generating revenue to cover server costs and yielding consistent cash profit

**Game Engine** | C++, SDL2, ZeroMQ, CMake

- Built a 2D event-driven game engine from scratch with features such as a physics system, multiplayer support, input handling, side-scrolling, replay system, customizable frame rates and timeline speeds
- Created three playable games: multiplayer platformer, snake, and brick breaker to validate engine capabilities

**IoT Smart Lock** | Python, Node.js, Next.js

- Engineered a smart lock system to prevent theft in freight trucks with internal funding from undergraduate institution
- Utilized GPS and Bluetooth to allow drivers to unlock the truck only when in proximity to predefined locations
- Implemented features such as dynamic route updates, automatic door locks, and 2-way handshake protocol for security

## Leadership and Organizations

**Head of Software Development, Coding Club:** Co-led 14 developers in organizing workshops for over 1,000 students

**Webmaster, ACM Student Chapter:** Maintained the college's chapter website with updates and 10+ event information

**Web Developer, Google Developer Students Club:** Brainstormed session ideas and competitions for the student community

**Volunteer, Youth Red Cross:** Participated in 10+ camps and awareness programs on health and safety initiatives