

# Vignesh Suresh Kumar

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## EDUCATION

### Georgia Institute of Technology

*M.S. in Computer Science, B.S. in Computer Science*

Expected May 2027

Atlanta, GA

Courses: Data Structures and Algorithms, Operating Systems, Networking, Databases, Java OOP

Awards: ADP Henry Taub Scholarship | GPA: 3.89/4.0

## EXPERIENCE

### Meta

*Software Engineer Intern*

May - August 2025

Bellevue, WA

- Engineered a consistent disaster recovery framework for 80,000+ distributed containers powering key infrastructure
- Deployed Rust-based automated recovery for 400+ key services, enabling seamless support within the Meta family of apps
- Enabled 15+ customers to modify & actively monitor their recovery packaging with Unidash GUIs and a Superconsole TUI

### Georgia Tech College of Computing

*Systems and Networks Teaching Assistant*

August - Present

Atlanta, GA

- Developing a Rust website to visualize and simulate key operating systems concepts (caching, paging, etc.) for 500+ students
- Facilitate weekly lab session for 40+ students, guiding lectures and hands-on activities in C, ASM, and networking
- Hold weekly office hours to support students with homeworks, clarify concepts for exams, and provide guidance on projects

### Fung Group - Georgia Tech

September 2023 - May 2025

*ML Researcher - Undergraduate*

Atlanta, GA

- Designed a custom version of the SZ3 framework to compress terabytes of molecular charge data by 100x
- Developed a Graph Neural Network for compressing volumetric data in under 1 second, significantly reducing dimensionality
- Automated the aggregation of statistics from 5 compression algorithms, enabling detailed analysis of impacts on charge density

### Meta & Major League Hacking

June - September 2024

*Production Engineer Fellow*

- Completed a 12-week program with guidance from Meta engineers, gaining hands-on training and insights from software talks
- Secured admission into highly competitive mentorship program, placing in the top 2% of applicants
- Developed and deployed an internal networking template for engineers utilizing a VPS, MySQL, NGINX, Docker, and Flask

### Automotive LIDAR - VIP

August 2023 - December 2024

*Software Engineer - Software Lead*

Atlanta, GA

- Utilized native multithreaded support in ROS2 to 4x path planning computations with LIDAR laser scanner
- Led a team of developers in streamlining the migration of foundational software for Project Sprite from ROS to ROS2, enhancing system performance and reliability

## PROJECTS

### Apache Gravitino | Open Source Contributor | Java, Mockito | [github.com/apache/gravitino](https://github.com/apache/gravitino)

December 2024 - Present

- Authored and merged multiple pull requests for an incubating Apache project with 1,200+ stars on GitHub
- Contributed to core command line functionality for Apache Gravitino, improving interactivity with stored AI models
- Implemented and refactored command line tests to ensure 100% test coverage, utilizing Mockito to mock external services

### GT Reserve | AWS, GraphQL, Python, SQL, Puppeteer, Typescript, Prisma, React | [gt-reserve.netlify.app](https://gt-reserve.netlify.app)

- Developed a responsive scheduling site to allow Georgia Tech students to filter between bookings on 30+ rooms
- Hosted AWS Lambda functions to automate scraping of data by Puppeteer into SQLite database and S3 buckets
- Created a GraphQL API to allow the frontend to query booking data from generated database with Prisma ORM

### Nomad | Swift, SwiftUI, XCode, iOS, OpenAI, MapKit, Mapbox, Firebase

- Implementing lossy route storage algorithms to reducing route size by 50%+ for routes over 1000 coordinates
- Enhanced app functionality by integrating Mapbox iOS SDK with MapKit, improving routing precision and user direction metadata

### CLI Shortener | Rust, AWS DynamoDB, NGINX, Docker, Axum, GitHub Actions | [GitHub](https://github.com/vigneshsk17/cli-shortener)

- Engineered a Rust-based link shortener that can create 500+ million shortcuts both on the internet and locally
- Employed DynamoDB to ensure highly efficient storage and retrieval of shortened links in a NoSQL format
- Utilized Docker and NGINX to provide secure HTTPS internet access, with CI/CD from GitHub Actions

## SKILLS

**Languages:** Java, Python, Rust, C, C++, Go, Kotlin, Swift, Dart, SQL, JavaScript, Typescript, Bash, F#

**Technologies:** Docker, AWS, Git, GitHub, Mockito, Firebase, Selenium, Android, SwiftUI, Jetpack Compose, React, Flutter, MySQL, SQLite, MongoDB, Robot Operating System

**Concepts:** Concurrency, Deployment, Web/Mobile App Design, Cloud Computing, Machine Learning, Robotics

**Soft Skills:** Communicator, Agile, Detail-oriented, Collaborative, Leadership, Quick Learner