

Vignesh Suresh Kumar

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EDUCATION

Georgia Institute of Technology

B.S. in Computer Science, Minor in Business Leadership

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

Awards: ADP Henry Taub Scholarship | *GPA:* 3.94/4.0

Expected May 2026

Atlanta, GA

EXPERIENCE

Meta & Major League Hacking

Production Engineer Fellow

June - September 2024

- 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

Fung Group - Georgia Tech

ML Researcher - Undergraduate

September 2023 - Present

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

Compliant Labs

Software Engineer Consultant

September - December 2024

- Analyzed working processes of 150+ trade companies and identified points of weakness, improving operational efficiency
- Conducted market research on AI-based document segmentation models to save clients up to \$500k a year.

Automotive LIDAR - VIP

Software Engineer - Software Lead

August 2023 - December 2024

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
- Crafted unit and integration testing (90% code coverage) using Python and C++ for obstacle detection algorithms

PROJECTS

Apache Gravitino | Open Source Contributor | *Java, Mockito* | 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

- 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)

- 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, C, C++, Go, Rust, 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