

# 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, Object Design

*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

- Engaged in 12-week program featuring guidance from Meta engineers, hands-on training, and 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

### Compliant Labs

*Technology Consultant*

September 2024 - Present

- Responsible for analyzing working processes of 150+ documentary trade companies; determining points of weakness
- Conducted market research on AI-based document segmentation models to save clients up to \$500k a year.

### 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
- Developing a Graph Neural Network for <1 second compression of volumetric data while reducing dimensionality
- Automating aggregation of statistics from 5 compression algorithms to analyze impacts on charge density

### Automotive LIDAR - VIP

*Software Engineer - Software Lead*

August 2023 - Present

Atlanta, GA

- Utilized native multithreaded support in ROS2 to 4x path planning computations with LIDAR laser scanner
- Led multiple developer in streamlining migration of foundational software for Project Sprite from ROS to ROS2
- Crafted unit and integration testing (90% code coverage) using Python and C++ for obstacle detection algorithms

### System Technology Works

*Software Engineer Intern*

January - May 2023

Peachtree Corners, GA

- Designed 10+ movements for humanoid robot Zeus2Q, including algorithms for bipedal walking and grabbing
- Integrated the NVIDIA Riva SDK to enable real-time conversational AI utilizing leading LLMs and RAG
- Prepared technical documentation videos for Zeus2Q's Python API, allowing for interfacing by customers

## PROJECTS

### 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)

- 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, 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