Vignesh Suresh Kumar

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EDUCATION

Georgia Institute of Technology   Atlanta, GA
BS, Computer Science; GPA: 3.71; Classes: DSA, Multivariable Calculus, Linear Algebra   *Expected Dec 2025*

EXPERIENCE

Humanoid Robotics Software Intern   Aug 2022 - May 2023
System Technology Works
- Planned out various movements for the humanoid robot Zeus2Q, including bipedal walking and grabbing
- Enhanced Zeus2Q's speech functionality through the use of the NVIDIA RIVA AI SDK
- Implemented user-facing ROS Python nodes to allow for future consumer interaction with Zeus2Q
- Advocated for and established improved code practices such as documentation comments and type hints

Automotive LIDAR Research Intern   Aug 2023 - Present
Georgia Institute of Technology
- Assist in development of the object detection system that underlies the movements of a four-wheeled robot
- Iterate upon ROS C++ modules for the robot's movement, LIDAR sensors, and telemetry
- Utilizing the Gazebo library to simulate the robot's processes virtually along with RViz to properly visualize collected data

Co-founder and Lead Organizer   May 2022 - Present
Horror Hacks
- Design and develop the event's official website from scratch, utilizing HTML/CSS, Javascript, and Astro to create an accessible and responsive site
- Organize and lead workshops in various programming languages and specialties, fostering skill development and creativity
- Reached 70+ high schoolers from various nationalities through utilization of social media and marketing

Club President and FRC Programming Captain   Aug 2019 - May 2023
Alpharetta Robotics Club
- Led the organization structure and managed club funding for 100+ members
- Served as a key programming and soft skills mentor for all of the club's robotics
- Innovated on Java codebase throughout the competitive season while introducing team members to the codebase
- Integrated depth-sensing camera to allow for vision-backed autonomous movements

PROJECTS

Cubimer | *Dart, Flutter, Local Storage, Cloudflare, Git* | cubimer.pages.dev   Jun 2023 - Aug 2023
- Developed a multi-platform web app using the Flutter framework and each platform's local storage solution
- Hosted the web version of the app on Cloudflare Pages to allow for users to access the app on any device
- Implemented the preferred form of local storage on each platform to allow for offline access to saved scrambles

CLI Shortener | *Rust, PostgreSQL, Axum, SQLx, Git*   May 2023 - Jun 2023
- Developed a secure and efficient link shortener service using Rust with Axum as the web server framework
- Employed PostgreSQL as the database management system for storing link data
- Applied Rust's asynchronous capabilities to handle concurrent requests efficiently, minimizing response times

FTC Stats CSV | *F#, Web scraping, Git*   Aug 2022 - Sep 2022
- Created a command-line application in F# that automates web scraping of data from ftcstats.org
- Incorporated F#'s powerful web scraping and data manipulation libraries to easily and efficently convert html table data to usable CSVs in a functional manner
- Conducted statistical analysis of generated data on 32 other robotics teams to optimize game strategy

SKILLS

Languages: Java, Python, Golang, Dart, SQL (Postgres), JavaScript, HTML/CSS, Rust, F#
Frameworks: Flutter, FastAPI, Axum, JUnit, Android, React, Astro, Svelte, SCSS, Tailwind
Developer Tools: Git, Docker, VS Code, Intellij, PyCharm, Goland, Vim, Neovim, Emacs
Interpersonal: Communicator, Quick Learner, Strong Work Ethic, Collaborative, Leadership
Operating Systems: MacOS, Linux, Windows