

Vignesh Suresh Kumar

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EDUCATION

Georgia Institute of Technology

Atlanta, GA

BS in Computer Science, Minor in Leadership - Business; GPA: 3.9

Expected May 2026

Classes: Data Structures and Algorithms, Objects and Design

EXPERIENCE

Georgia Institute of Technology - Fung Group

Sep 2023 - Present

Research Assistant

Atlanta, GA

- Collaborate with a distinguished team of researchers to design and optimize cutting-edge graph neural networks to calculate molecule properties efficiently
- Integrated the state-of-the-art SZ3 compression framework to improve data compression ratios by 200% while maintaining roughly 0.5% error in model prediction
- Utilize PyTorch Geometric and Torchmetrics libraries to efficiently pre-process large datasets of chemical structures and properties

Georgia Institute of Technology - VIP

Aug 2023 - Present

Automotive LIDAR Research Intern

Atlanta, GA

- Contribute to improved path planning and obstacle avoidance capabilities for four-wheeled rover
- Led an effort to migrate from ROS 1 to ROS 2, leading to improved developer efficiency and 2x performance gains from multithreading
- Iterate upon ROS 1 modules assisting with the robot's simulation and testing

System Technology Works

Aug 2022 - May 2023

Software Engineer Intern - Robotics & Perception

Peachtree Corners, GA

- Designed and implemented movements for the humanoid robot Zeus2Q, including bipedal walking and grabbing
- Integrated the NVIDIA RIVA AI SDK to significantly enhance Zeus2Q's speech recognition
- Architected user-friendly ROS 2 Python nodes, providing consumers the ability to seamlessly customize Zeus2Q

Horror Hacks

May 2022 - Oct 2023

Co-founder and Lead Organizer

- Developed the event's official website from scratch, utilizing HTML/CSS, Javascript, and Astro to craft an accessible and responsive site
- Reached 70+ high schoolers from various nationalities through utilization of social media and marketing

PROJECTS

Cubimer | Dart, Flutter, Local Storage, Cloudflare, Git | cubimer.pages.dev

Jun 2023 - Aug 2023

- Produced a multi-platform cubing timer app using Flutter, utilizing each platform's state management solution
- Hosted the web version of the app on Cloudflare Pages to ensure fast loading times and reliable access worldwide
- Crafted an elegant and effective layout utilizing the Material Design philosophy and responsive layouts

CLI Shortener | Rust, PostgreSQL, Axum, SQLx, Git

May 2023 - Jun 2023

- Engineered a highly efficient link shortener tool using Rust for the web server framework to maximize performance
- Employed PostgreSQL and SQLx to ensure reliable and secure storage and retrieval of shortened links
- Capitalized on Rust's asynchronous abilities to handle concurrent requests 20% more efficiently than alternatives

FTC Stats CSV | F#, Web scraping, HTML/CSS, Git

Aug 2022 - Sep 2022

- Architected a command-line tool in F# to automate web data extraction from ftcstats.org
- Incorporated F#'s powerful web scraping and data manipulation libraries to easily and effortlessly convert HTML table data to usable CSVs

SKILLS

Languages: Java, Python, Golang, Dart, C#, SQL (Postgres, SQLite), JavaScript, HTML/CSS, Rust, F#

Frameworks: AWS, Flutter, FastAPI, Axum, ASP.NET Core, JUnit, Android, React, Astro, Svelte, SCSS, Tailwind

Developer Tools: Git, Docker, VS Code, Postman, IntelliJ, PyCharm, Goland, Vim, Neovim, Emacs

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

Operating Systems: MacOS, Linux, Windows