Visvam Rajesh

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Skills

Languages	Python, Java, C++, JavaScript/TypeScript, Rust
Frameworks	React, Node.js, Next.js, ROS 2
Systems & Tools	Docker, Linux, AWS, Git, CI/CD, Github Copilot
Data & ML	NumPy, Pandas, PyTorch, scikit-learn, Matplotlib

Education

2025 - 2028 **Carnegie Mellon University** (GPA: 3.35/4.00)
BS Computer Science & Robotics
Selected Coursework: Great Theoretical Ideas in Computer Science, Great Practical Ideas for Computer Scientists, Principles of Imperative Computation
Research Interests: Robot foundation models, embodied AI, systems for ML experimentation

2021 - 2025 **Hunterdon Central Regional High School** (WGPA: 4.43/4.00)

Work Experience

Carnegie Mellon Racing Sept 2025 - Present
Driverless Path-Planning Developer

- Developed trajectory planning algorithms for an autonomous racecar using C++, Python, and ROS 2
- Standardized testing workflows using Docker, improving reproducibility across development environments
- Collaborated with hardware teams to integrate perception, control, and planning under real-time constraints

ScottyLabs Sept 2025 - Present
Software Engineer Developing backend systems for CMU Courses serving 5k+ weekly users; implementing scheduling heuristics using Rust and TypeScript; working within CI/CD pipelines.

Visra Solutions Dec 2023 - Aug 2025
Software Engineer Intern

- Developed multiple full-stack websites end-to-end within days using AI Coding Agents
- Designed modular data visualization components emphasizing performance and maintainability
- Deployed and tested applications on AWS EC2 Instances; worked across React frontends and Node.js backends

The Daleks, FIRST Robotics Competition Team 3637 Sept 2021 - Jun 2025
President (June 2024 – June 2025), **Programming Captain** (May 2023 - June 2024)

- Led autonomous software development using C++ and Python; Integrated CI/CD and Git best-practices
- Handled sensor signal processing, computer vision, and trajectory planning algorithms for robot control
- Coordinated a multidisciplinary team under a six-week build cycle; competed at the World Championship; earned the FIRST Impact Award, Engineering Inspiration Award, and Excellence in Engineering Award.

Projects

Poké-ViT (Link) Jan 2026
Built a Vision Transformer-based ML model to classify over 1000 Pokémon characters using PyTorch. Used a public dataset to train, test, and validate the model. Also explored web-scraping algorithms to collect data.

Password Manager (Link) July 2025
Designed and built a cross-platform encrypted password manager from scratch in Python. Implemented secure local storage using Fernet encryption, session-based authentication, and an interactive TUI using Textual. Made explicit tradeoffs between security, usability, and maintainability based on real usage.

Working Title: Food Game (Link) Present
Working on a small game where players combine ingredients to make food. Written in C++ using Raylib. Learning to output graphics, audio, and UI from scratch.

Publications

Rajesh, V. & Wu, C. An Extension of Pathfinding Algorithms for Randomly Determined Speeds. IEEE International Performance, Computing, and Communications Conference, 2024. (Link)