Surya Prakash Murugavvel

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Education

Georgia State University Atlanta, GA

Bachelor of Science in Computer Science, Minor in Mathematics *Expected Graduation: May 2027*

- Dean's List: Spring 2025, Summer 2025
- **Relevant Coursework:** Data Structures & Algorithms, System-level Programming, Computer Organization & Programming, Software Development, Programming Language Concepts, Computer Networks, Discrete Mathematics, Calculus I/II/III, Probability & Statistics, Linear Algebra, Numerical Analysis I, Physics I/II, Electronics

Technical Skills

Languages: C, C++, Python, JavaScript, HTML/CSS, Verilog, VHDL, MATLAB, MySQL, MongoDB
Frameworks/Libraries: ReactJS, Next.js, Three.js, TensorFlow, PyTorch, Pandas, NumPy, Selenium
Networking & Systems: Wireshark, TCP/IP, UDP, DNS
Tools/Technologies: Amazon Web Services (AWS), Docker, Git, GitHub, Emscripten, REST APIs, Blender, Circuit Analysis (DC Circuits, AC Circuits, Fourier Analysis), Oscillators
Platforms: Windows, macOS, Linux

Projects

Neuromuscular-Controlled RC Car | *C++, Arduino, CAD, Signal Processing* August 2025– Present

- Developing a microcontroller-driven RC car with sensor-based steering and motor control for terrain adaptation
- Integrated CAD-modeled chassis and custom circuits to optimize weight distribution and response timing
- Reinforced knowledge in **embedded systems, hardware-software integration,** and **signal processing** through iterative testing

Style.Me | *Python, JavaScript, Selenium, OpenAI API, Pinterest API* November 2025

- Built and deployed a Chrome extension that performs real-time style analysis for personalized apparel recommendations from online retailers
- Optimized data collection by integrating **Selenium-based scraping** with fashion APIs to improve **product retrieval speed and coverage**
- Leveraged **LLM-based natural-language processing** to interpret style queries and refined skills in **API integration, data parsing,** and **user-experience** optimization

Threadoku | *C++, JavaScript, WebAssembly, Emscripten, CPR, nlohmann/json* April 2025

- Architected a multi-threaded Sudoku solver compiled to WebAssembly for **interactive browser** visualization
- Increased algorithmic efficiency by **63%** through parallel processing, thread synchronization, and dynamic load balancing
- Enhanced expertise in **concurrency, performance tuning, and scalable system design** for compute-intensive applications

PaperKeys | *ReactJS, JavaScript, MediaPipe* February 2025

- Collaborated on an interactive virtual piano that uses **hand tracking** with a printed keyboard for **real-time note feedback**
- Improved tracking precision by replacing OpenCV with custom anchor-point alignment, reducing note-detection errors by >**20%**
- Refined expertise in **computer vision, real-time data processing, and user-interaction modeling** within team-based agile development

DiagnAI | *Python, HTML/CSS, JavaScript, Anthropic API* October 2024

- Collaborated in an agile team to create an AI-powered health assistant providing personalized symptom screening and medical insights
- Optimized backend asynchronous request handling and knowledge-base integration to reduce query latency by **35%**
- Learned to architect **scalable backends,** manage **asynchronous requests,** and design **intuitive conversational UIs**

Extracurriculars

Rocket Technologies GSU August 2024 – Present

Software *Atlanta, GA*

- Contributed to the design and simulation of model rockets and autonomous rovers using thrust vector control systems to enhance flight stability and precision
- Improved thrust-vectoring performance by **25%** through iterative testing, control-loop tuning, and data analysis with **MATLAB** and embedded software tools
- Gained hands-on experience in **aerospace simulation, sensor calibration, embedded control systems,** and **team leadership** through multidisciplinary collaboration