Joseph Farkas

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EDUCATION

Georgia Institute of Technology
Atlanta, GA

Bachelor of Science in Computer Science, Devices and Intelligence (International Plan) — *Expected May 2027*

Minors in Robotics and German — *GPA: 4.00*

- Relevant Coursework: Data Structures and Algorithms, Objects and Design, Multivariable Calculus

PROFESSIONAL EXPERIENCE

UX Assistant
Aug 2025 – Present

Georgia Tech PACE High Performance Computing Center — *Atlanta, GA*

- Supporting over 5,000 researchers with incident triage across high-performance computing systems
- Handling 20+ tickets weekly, resolving 80% of issues independently using Linux and debugging skills
- Leading initiatives to implement locally run LLMs in unique research, such as robotics and computer vision

Software Intern
Aug 2024 – May 2025

Viasat Inc. — *Duluth, GA*

- Developed C/C++ firmware and Typescript frontend for prototype three-axis satellite antennas
- Improved responsiveness of ephemeris loading by 90% through multithreading and upgraded XML search
- Built algorithms for analyzing signal quality and atmospheric modeling; integrated CI pipelines for validation

Software Department Lead
Oct 2021 – May 2025

North Gwinnett Robotics — *Suwanee, GA*

- Mentored 15 students with limited prior experience in utilizing C++ to process sensor input and control robots
- Collaborated with engineers to design and manufacture robot over eight weeks while managing six-figure finances
- World Competition Autonomous Award, Divisional Champions & 3x State Champions

ACTIVITES

Guidance, Navigation and Control Team
Aug 2025 – Present

Propulsive Landers @ Georgia Tech — *Atlanta, GA*

- Applying PID+LQR and nonlinear MPC to optimize rocket's fuel usage powered descent
- Porting lossless convexification algorithm from Python to Rust for on-device trajectory replanning
- Plotting simulated flights in MATLAB for validation and to inform propulsion and avionics

RoboCup: Autonomous Software Team
Aug 2025 – Present

RoboJackets @ Georgia Tech — *Atlanta, GA*

- Building multi-agent pathfinding, obstacle avoidance and task allocation in C++ for 6v6 robot soccer
- Strengthening ROS stack to interface with telemetry, vision, and low-level control systems

PROJECTS

Personal Finance App | *Java, Android Studio, Agile Development, Google Firebase* — Aug 2025 – Present

- Collaborating in a team of 5 to build an Android app for managing budgeting and financial needs
- Implementing Google Firebase for user authentication and data storage, as well as MaterialUI for intuitive design

SlashSpend: Subscription Safety | *Retro Track Winner: HackNC* | DevPost — Oct 2025

- Developed extension to flag shady subscription practices and graph price history
- Built a Deno backend with Gemini API for web scraping to extract and analyze subscription data

Natural ASL Communication | *Python, TensorFlow, Jupyter, scikit-learn, Pytorch* — Sep 2023 – Feb 2024

- Applied action-based convolution neural networks on Google's Mediapipe holistic landmark model for OpenCV
- Interpreted 40 ASL phrases and 5 moods using facial expressions for natural English translation and emotive TTS

TECHNICAL SKILLS

Computer Languages: Python, Java, C, C++, Rust, JavaScript, HTML/CSS, Dart, MATLAB, SQL

Frameworks & Libraries: Tensorflow, scikit-learn, CUDA, Jupyter, ROS, Matplotlib, OpenCV, ArUco, React

Developer Tools: Git, Linux, Docker, Google Firebase, Android Studio, AWS

CAD/CAM: Fusion 360, SolidWorks, Autodesk Inventor, 3D Printing, CNC Operation

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