

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, Linear Algebra, Multivariable Calculus

EXPERIENCE

UX Assistant

Aug 2025 – Present

Georgia Tech PACE Supercomputing Center

Atlanta, GA

- Supporting over 5,000 researchers with incident triage across high-performance computing systems

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 in real time powered descent
- Porting on-the-fly convexification algorithm from Python to Rust for on-device trajectory replanning

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

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; implemented CI pipelines for validation
- Assembled and wired rig to test cable fatigue over 100,000 accelerated cycles

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

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
- Developing an LLM model for easier user interaction
- Implementing Google Firebase for user authentication and data storage, as well as MaterialUI for intuitive design

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
- Won second place at regional science fair

Holonomic Auto-Alignment using CV Localization | C++, Java, ArUco

Aug 2023 – May 2025

- Applied second-order kinematics and jerk limiting to replicate S-curve profile for discretized holonomic drive
- Fused CV estimates from fiducials with filtered odometry using a state-space model for real-time robot location
- Developed a heuristic for scaling weight of vision data and for latency compensation
- Allowed competition robot to align to any scoring position with < 1cm accuracy regardless of starting state

TECHNICAL SKILLS

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

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

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

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

Foreign Languages: German (Intermediate - B2), Hungarian (Native)