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

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

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

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
- Allowed competition robot to align to any scoring position with < 1cm accuracy regardless of starting state

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

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

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

TECHNICAL SKILLS

Computer Languages: Python, Java, C, C++, Rust, JavaScript, HTML/CSS, Dart, MATLAB
Frameworks & Libraries: Tensorflow, scikit-learn, CUDA, 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)