Will Varner

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EDUCATION

University of Georgia, Bachelor of Science in Computer Science — May 2027

- 3.8 GPA | UGA Presidential Scholar, Dean's List, Zelle Miller Scholar
- Societies and Leadership: UGA DevDawgs, Order of Omega, ACM, MathCounts UGA, UGA Miracle, Soc. for Cyber Security

SKILLS

- Languages & Frameworks: Python, Java, C++, Next.js, Typescript, Swift, Go, SQL, React, ReactNative, HTML, CSS, C, C#, Flask
- Tools & Technologies: GCP, AWS, Azure, Docker, Git, Jira (Scrum), Agile, Linux/Unix Environments & Command Line, ROS
- Relevant Coursework: Algorithms, Data Structures, Software Engineering, Systems Programming, Theory of Computing

EXPERIENCE

Software Engineering Intern, Leidos (via MSC) - Atlanta, GA — May 2025 - Present

- Led core migration of CDASim's CARLA 0.10.0 co-simulation infrastructure from ROS1/Python to ROS 2 Humble, actively incorporating feedback from bi-weekly standups and peer code reviews to significantly boost system speeds by over 25%.
- Designed and ported 15+ critical ROS1 backend nodes from CARMA-CARLA Bridge to the ROS2 rclpy library, collaborating with the team on implementation discussions and undergoing rigorous PR reviews to eliminate complex ROS1 bridges and achieve direct, low-latency (<5ms) communication with CARMA Platform, enabling highly concurrent operations.
- Architected and developed carla_ros2_bridge, a pivotal ROS 2 interface for Carla 0.10.0, enabling critical real-time data streams for ROS 2 interfacing, now actively considered for open-source inclusion by the official CARLA team.
- Prototyped a unified XML-RPC communication protocol as an alternative to TraCI, reducing protocol overhead by 50% and increasing extensibility for actor/sensor interactions, leading to more efficient simulation resource utilization.
- Rigorously tested and validated real-time data fidelity and performance (~20hz for dynamic topics) across new components via extensive unit and simulation testing, recording Jira demos to support CI/CD pipelines and ensure quality assurance.

Research Assistant, Mobility Systems Control (MSC) Laboratory - Athens, GA — Feb 2025 - May 2025

- Built a real-time vehicle detection pipeline leveraging machine learning (YOLOv8), Python, and OpenCV, achieving 90%+ accuracy on camera-LiDAR university police vehicle footage, enhancing data reliability for autonomous vehicle research.
- Performed sensor fusion of LiDAR and camera data using point cloud registration to improve 3D object localization by 35%, supporting the development of a high-fidelity digital twin of UGA traffic.
- Automated data pipeline ROS bag extraction and transformed raw sensor data into structured CSV datasets, reducing preprocessing and troubleshooting time by 80% and accelerating downstream development.
- Developed a Dash-based UI to visualize bounding boxes, relative velocities, and vehicle tracking in real-time, maintaining 98% tracking consistency across frames, facilitating faster, more accessible analysis of traffic patterns.

Software Engineering Intern, Georgia Tech Research Institute - Atlanta, GA — June 2022 - July 2022

- Collaborated with a four-intern team on a full-stack Python computer vision facial detection application, spearheading critical object-oriented design and software development for key components, streamlining attendance tracking by 90%
- Drove iterative enhancements based on user feedback, personally incorporating changes that led to a 40% increase in user satisfaction and ensured timely project completion within a tight five-week deadline.
- Engineered critical optimizations to Google MediaPipe's facial detection logic, enhancing its handling of rapid user succession and reducing data inaccuracies by 43% through automated data collection and file management.

PROJECTS

TechDetect - Python, OpenCV, Flask, MySQL, HTML, CSS — July 2022

- Created a facial detection program for implementation in the USG education system, reducing attendance taking time by over 80%. Implemented secure, locally-hosted Flask frontend web interface with MySQL database for data visualization.

The WADaily Mobile Project - React, Docker, ReactNative, MongoDB, JSON, RESTful APIs, Tailwind CSS — May 2023

- Engineered a cross-platform mobile app, processing thousands of API calls for 500+ students and teachers. Delivered near-instant (.02s) data access, eliminating multi-page navigation and significantly streamlining the student experience.

RECOGNITIONS & AWARDS

- **Order of Omega**, Member: Recognized in top 5% of the student body for leadership and academics.
- **Congressional App Design Contest**, First Place Winner: Awarded first place in the 2022 competition for TechDetect, selected by state senators and local government representatives.