

ANDY VAN

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github.com/[therealjohnwall1](https://github.com/therealjohnwall1)

Education

San Jose State University

Bachelor of Science in Computer Science

Sep. 2023 – December 2026

San Jose, California

Experience

SJSU UAV

April 2025 – Present

Software Lead and Founding Member

San Jose, California

- Co-founded competitive UAV team, building drone and autonomy stack from 0 to 1, entering SUAS competition 2026
- Developed and optimized onboard autonomy, perception, and mapping pipelines, accelerated model inference for real-time UAV operation in search-and-rescue missions
- Built photomosaic pipeline using OpenCV to stitch aerial imagery into geo-referenced maps in the field, running live
- Implemented FPGA acceleration of SIFT on AMD Kria, offloading keypoint/descriptor kernels
- Building out VTOL UAV, implementing vehicle dynamics and controls, including controller design/tuning for stable transition and hover-to-cruise flight

STMicroelectronics

September 2024 – September 2025

Algorithm Intern

Santa Clara, California

- Created foundational imu sensor/SIM2REAL models, leading to direct usage requests from NVIDIA's Isaac Sim and Tesla's simulation teams
- Built sensor benchmarking + calibration system with using ROS on a cobot arm. Achieved 3x more efficient inertial sensor calibration for MEMS imu firmware compared to traditional methods
- Optimized ML inference + finetuning pipeline on Android NDK for gait signal analysis deployed to 7500+ beta testers using AWS SageMaker and Google Cloud Vertex AI, implementing LiteRT for mobile deployment
- Engineered and optimized novel sensor fusion algorithms that surpassed SOTA benchmarks by 15% in accuracy for velocity and orientation estimation, awaiting deployment for consumer smartphone chips, patented
- Created in-house datasets and soil regression models to predict moisture in edge sensors, paper awaiting conference

HydroLink Systems

March 2024 – September 2024

Fullstack Developer

San Jose, California

- Designed and implemented full-stack web architecture using React Native and FastAPI, integrating MongoDB Atlas with JWT authentication, RESTful and WebSocket APIs
- Wrote IoT firmware for smart shower systems on ESP32 microcontrollers with MQTT protocols, implementing real-time data communication and power-efficient sensor management

Spartan Racing (FSAE)

August 2023 – August 2024

Sensor Software Designer

San Jose, California

- Implemented sensors for torque vectoring support development to achieve all-wheel drive systems in future competition cars, improving vehicle handling and acceleration
- Developed in-house sensors integrating gnss, imu, and camera systems with CAN and UART protocols in C/C++, resulting in 20% increase in accuracy
- Contributed to team advancement from unranked to 5th globally ranked team, driving innovations that strengthened competitive standing in FSAE competitions

Loncapa Solvers

August 2022 – March 2023

Student Developer

San Jose, California

- Managed comprehensive physics problem-solving database assisting with 200,000+ problems, maintaining active database for student assistance and academic support
- Refined efficient CI/CD pipeline for problem scraping and matching using Python and TypeScript, accelerating average user workflows by 100% and enhancing productivity
- Added clustering mechanisms utilizing Raft Consensus algorithm resulting in 50% increase in system reliability and reducing load on individual nodes by 35%

Technical Skills

Languages: Python, C/C++, Rust, Verilog, CUDA, JavaScript/TypeScript, HTML/CSS, SQL, L^AT_EX, Java

Frameworks/Tools: PyTorch, FastAPI, Svelte, MongoDB, PostgreSQL, OpenCV, Linux, Git, AWS, Docker, ROS

Areas: Computer Vision, Natural Language Processing, Digital Signal Processing, Embedded Systems