Andy Van

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Experience

SJSU UAV **April 2025 – Present**

Software Lead and Founding Member *San Jose, California*

- Spearheaded the design and construction of a competition-ready drone from concept to completion, integrating custom hardware and developing flight control software to meet specific performance metrics
- Designed autonomous drone flight control and trajectory systems with PID controllers, state estimation algorithms, and automated stabilization for autonomous flight

STMicroelectronics **September 2024 – Present**

Machine Learning/Algorithms Intern *Santa Clara, California*

- Developed foundational time series models using contrastive learning with autoencoders on IMU signals, creating large-scale training pipelines achieving 200% faster inference with 90% accuracy
- Optimized ML pipeline deployed to 7,500+ beta testers using AWS SageMaker and Google Cloud Vertex AI, implementing Android NDK and LiteRt for mobile deployment
- Built sensor validation system with robotic arm and ROS achieving 3x more efficient inertial sensor calibration for MEMS IMU firmware production, results used in marketing campaigns
- Implemented sensor fusion algorithms for velocity estimation and orientation across consumer phones, laptops, automotives and satellites with DSP filters and on-chip tinyML inference

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 to support development of 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%

CrowdStrike **May 2022 – August 2022**

Software Intern *Remote*

- Developed in-house web sockets and servers using Python and C implementing multithreading to handle multiple concurrent connections and network communications
- Collaborated closely with senior staff presenting technical solutions and incorporating feedback to rapidly develop robust skill set and improve team efficiency

Education

San Jose State University **Sep. 2023 – May 2026**

Bachelor of Science in Computer Science *San Jose, California*

Technical Skills

Languages: Python, C/C++, Rust, CUDA, JavaScript/TypeScript, HTML/CSS, SQL, LaTeX, Java
Frameworks/Tools: PyTorch, FastAPI, React, Svelte, MongoDB, PostgreSQL, OpenCV, Linux, Git, AWS, Docker, ROS
Areas: Machine Learning, Computer Vision, Natural Language Processing, Digital Signal Processing, Microservices, DevOps/Cloud Platforms