JESSE GALLOWAY

Autonomous Systems Software Engineer

</> EXPERIENCE

Mission Software Engineer – *Anduril Industries* 2022 -

Long-duration ISR payload and mission system

- Technical lead for engineering team that developed and deployed a novel payload enabling autonomous ISR capabilities on a COTS fixed-wing vehicle in C2 restricted environments.
- Designed and tested complex behavior trees for vehicle motion, gimbal control, and payload security
- Continual payload testing of software in the loop (SITL), hardware in the loop (HITL), and on-vehicle flights

Autonomous underwater vehicle mission system

- Created an autonomous mission system for a large displacement submarines on NVIDIA Jetson devices
- System performed autonomous underwater movement, sea-floor scanning, and object tracking in sea trials

UAV comms-denied payload delivery mission system

- Developed a UAV area search system using onboard object recognition and tracking to identify and inspect a given object - vehicle performed different behaviors based on detected world state.
- Designed software in C++/Rust to interface with vehicle flight controllers enabling autonomous operation.

Autonomous Vehicle Software Engineer – *Aurora Flight Sciences, Boeing* 2020 - 22

Autonomous flight and landing system - emergency solution for commercial vehicles

- Scrummaster and leader of software development and integration team
- Integrated system to run on existing aircraft
- Demonstrated flight and landing solutions to the FAA in live flight tests in commercial airspace completion even in the case of vehicle attrition

Teaming UAV mission system - multi-vehicle reconnaissance mission

- Extended and created services within a C++ microservice architecture
- Constructed containerized multi-vehicle mission simulation framework, running automated regression and randomized tests in parallel 24/7
- Developed comms architecture allowing efficient mission completion even in the case of vehicle attrition

Aviation Conflict Detection & Resolution - collision avoidance for RTOS

- Implemented multi-aircraft tracking system in C++
- Built tracker to operate within a real-time, mission critical, environment
- Created engaging web-based Python GUI displaying system status

Full Stack Webapp Developer – *GymSpot* 2019 - 20

- Designed and deployed a Google Firebase web application iterating with buisness owner
- Constructed NoSQL database handling geo-queries with more than 6k reads per day
- Built responsive Angular front-end with TypeScript and material design

🏛 ACADEMIC

Lehigh University: B.S. Computer Science 2020

BeetleTracker – *Swarthmore College* 2019 - 22

- Worked with a biology professor to design and implement an insect tracking tool to automate video processing
- Designed system which tracks insects and categorizes social interactions
- Created two utilities: A UI where researchers pre-process a video, and a script that leverages a TensorFlow backend to process videos on a high-performance computing cluster

Smart Intersection Project – *Lehigh University*

- Worked with a team of two other students to develop software for an AI-assisted traffic intersection
- Used machine learning to identify vehicles with a camera using a TensorFlow deep CNN
- Awarded the Peer Choice Award from fellow students

Drone Data Collection – *University of Virginia* 2014 - 16

- Designed, programmed, and built data-loggers using Arduino
- Collected environmental data using unmanned aerial vehicles in collaboration with Dr. Stephan de Wekker
- Beta-tested and reviewed professional aerial data logging equipment

Nix | C/C++ | Rust | Python | Java | RTOS | SQL | Mavlink | UAVs | AUVs | TS clearance

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