Julie Wang

jswang
julieswang

Work Experience

Parallel Systems — Los Angeles, CA
Lead, Perception Team — *Mar 2023 – Mar 2024*

- Lead design of ML infrastructure and ML algorithms. Develop requirements, architect system with senior engineers, and create feature road maps against company objectives.
- Developed 3D object detection and 3D rail reconstruction in a resource constrained online embedded platform and within a cloud based offline environment.
- Led data collection effort in partnership with major customer, resulting in first of its kind large labelled rail dataset. Used to train and test models at Parallel. Designed system, wrote Python and Rust code, installed on customer vehicles, wrote joint development agreements, and executed test plans.
- Developed live video streaming system in Rust to stream live video over WebRTC from Parallel vehicles. Inventor on pending patent.
- Grew team from zero to seven engineers.

Parallel Systems — Los Angeles, CA
Senior Software Engineer — *July 2020 – Feb 2023*

- First hire at Parallel Systems, built company's foundational software across perception, vehicle, and fleet systems.
- Wrote and deployed onboard perception system for first vehicle: Live video streaming into an object detector using TensorRT on an NVIDIA Jetson. Used to raise $45 million Series A.
- Developed Rust FFI bindings and Rust API for NVIDIA Deepstream video processing library, resulting in widely used Rust codebase for organization.
- Wrote and deployed core vehicle systems including: train mapping library, vehicle state machine, feedforward controllers, and vehicle commanding infrastructure.

SpaceX — Los Angeles, CA
Firmware Engineer II — *Jan 2018 – July 2019*

- Wrote baremetal C++ for avionics boxes with tightly coupled FPGAs and microcontrollers.
- Firmware lead for laser communications project. Implemented motor controllers, DSP algorithm, and various control algorithms. Project flew with multiple launches.
- Responsible firmware engineer for video encoder and network switch on fairing recovery system. System used to successfully recover fairings.

SpaceX — Los Angeles, CA
FPGA Engineer — *July 2014 – Dec 2017*

- Primary FPGA engineer on four human spaceflight projects. Wrote VHDL, performed HITL testing, and brought up new Xilinx Ultrascale+ platforms. Designs fly on all manned Crew Dragon spacecraft.

Education

Stanford University — Stanford, CA
M.S. Computer Science - Artificial Intelligence, 4.0 — *2019-2022*

Cornell University — Ithaca, NY
B.S. Electrical and Computer Engineering, 4.0 — *2010-2014*

Awards & Conferences

- **RustConf Keynote**: Gave closing keynote at RustConf 2022: "All aboard the Rust train".
- **Kick Ass Award**: Awarded by SpaceX for superior contribution, personal commitment, and 'get it done' mindset.
- **William S. Einwechter Award**: Awarded by Cornell for distinguished service to the ECE Department.
- **Frank and Rosa Rhodes Award**: Awarded by Cornell for outstanding leadership and academic achievements.

Skills

Languages: Rust, Python, C++, C, VHDL, Verilog

Technologies: PyTorch, CUDA, Gstreamer, Deepstream, Docker, Linux