

Jay Fleischer ■ email: jayhf614@gmail.com ■ website: jayf.engineer

Employment Experience

Anduril – Software Engineer – Mission Autonomy (2021-present) in Irvine, CA – anduril.com

Berkshire Grey – Senior (2021) Robotics Software Engineer (2019–21) in Boston, MA – berkshiregrey.com

- Receiving a BG Belt for work in hackathon, Python 3, Ubuntu 18.04 upgrade, etc. Awarded 3 peer awards
- Leading throughput KPI optimizations, roughly doubling pick rates and adding instrumentation with a distributed tracing framework. Developing roadmap, running meetings, proposing improvements. Implementing pipelining in core app, rewriting graph search, and many more changes across our stack
- Mentoring new hires and improving onboarding resources to help everyone get up to speed
- Supporting internal software and tooling, remote customer deployments and on-call
- Making system compatible with Kubernetes and creating a deployment tool used in production
- Merging 860 pull requests for everything from bug fixes, optimizations and features to massive refactors

Aurora – Hardware Intern (Summer 2018) in San Francisco, CA – aurora.tech

- Developing a pedestrian localization system for automatic labeling with RTK GPS
- Writing calibration firmware for a power distribution board and a script for automatic calibration

Two Sigma Securities – Software Engineering Intern (Summer 2017) in New York City, NY – twosigma.com

- Member of the Global Execution Services team that executes large trades for external clients
- Implementing a proprietary binary communications protocol to handle placing orders

University of Pennsylvania (2014–19) School of Engineering and Applied Science in Philadelphia

- Master of Science in Engineering in Robotics
- Bachelor of Science in Engineering in Computer Science + Mechanical Engineering & Applied Mechanics
- GPA: 3.97/4.0 masters 3.86/4.0 undergrad and Dean's List 2014–15, 2015–16, 2016–17, 2017–18, 2018–19
- Ralph Teetor Award for being the senior who in the opinion of the department's faculty has demonstrated the qualities of ingenuity, creativity, scholarship, and service
- Francis G. Tatnall Prize for being judged most outstanding project showing ingenuity, proficiency and usefulness for senior design project. Built a coral reef surveying boat with 5 other engineers. Worked on system design, sensor integration, PCBs, autonomous waypoint control and a phone app for remote control.

Penn Electric Racing – Software Lead (2014–19) – pennelectricracing.com

- Building a full-size electric racecar each year to compete in FSAE Electric competitions
- 3rd at FSAE Lincoln in 2019 with 4WD racecar with custom motor controllers
- Leading meetings, teaching new members, reviewing code and ensuring software projects get done
- Researching and starting development of future autonomous capabilities
- Writing, debugging and optimizing a field-oriented control algorithm for custom 30kW motor controllers
- Generating C++ code to manage CAN communications across devices and integrate with a custom binary serial protocol and telemetry system for logging, debugging and visualizing with a live graphing tool
- Designing ADC, CAN, I2C, SPI, Timer, UART etc. peripheral libraries for STM32F7s using DMA
- Wiring, SMT soldering, designing & reviewing our ~47 custom PCBs, extensive hardware debugging

Course projects include:

- Developing a model predictive control algorithm in a custom racecar physics simulation
- Using neural networks to locate cones in blurry images while accounting for the racecar's velocity
- Implementing an Unscented Kalman Filter for orientation tracking and EKF for SLAM
- Writing a nonlinear quadcopter controller and using A* and a trajectory generator to fly through mazes
- Creating and programming a team of three robots to play hockey autonomously against other teams
- Designing a pipelined superscalar CPU for a FPGA and making a Verilog parser to generate a wiring table
- Adding several implementations of surreal numbers to Haskell
- Constructing a wind turbine that had the highest power output thanks to hundreds of FEA simulations
- Devising a business plan and supporting documents for a medical device 3D printing startup idea
- Crawling nearly 20 million webpages with a distributed AWS cluster to build a search engine

Technical Skills

- Most experienced with: Python, C++, C#, Java
- Tools: Ubuntu, Bash, ROS, Docker, Kubernetes, MongoDB, Kafka, Zookeeper, Kibana, Elasticsearch, Jira, JetBrains IDEs, Git, SolidWorks, MATLAB, Simulink, Altium, PyTorch, CMake, OpenGL, Protobuf, gRPC

Other Interests

- Ran the 2019 Zermatt Ultramarathon. Expert skier