Paxton Scott

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Education

Stanford University Sep. 2018 – Jun. 2023

M.S. in Computer Science (Artificial Intelligence track)

B.S. in Engineering Physics (Computational Science track)

- **Coursework:** Space Mechanics, Control of Distributed Space Systems, Machine Learning, Deep Learning, Convex Optimization, Markov Decision Processes, Robotics, Scientific Computing, Computer Systems, Embedded Systems, Networking, Mechatronics, Quantum, Lagrangian, and Statistical Mechanics, Advanced E&M, Special Relativity, Linear Algebra, PDEs, ODEs, Statistics.

Work Experience

Stanford Doerr School of Sustainability Jan. 2025 - Present

Modeling & Simulation Engineer *Palo Alto, CA*

- Collaborated with Prof. Eric Dunham to enhance a fluid dynamics library, improving accuracy in modeling Vulcanian eruptions.
- Utilized Python, NumPy, SciPy, Matplotlib, and Jupyter Notebooks for data analysis and visualization.

SpaceX Jun. 2022 – Sep. 2022 (intern) & Aug. 2023 – Dec. 2024 (full-time)

Software Engineer *Redmond, WA*

- Led telemetry reduction effort, decentralized user terminal software update process, refactored satellite software update system to support manifest-style updates, wrote new ground service to query satellite ephemerides and improve ground-to-satellite communication.
- Wrote C++ and Python vehicle-side software and tested extensively in HITL.
- Worked with Docker, Kubernetes, git, shell scripts, gRPC, and CI/CD systems.

Boecore Jun. 2021 – Aug. 2021

Modeling & Simulation Intern *Colorado Springs, CO*

- Wrote shell scripts and developed applications in C++ and Java with an emphasis on object-oriented programming and test-driven development.
- Obtained a security clearance.

StoneAge Nov. 2020 – Mar. 2021

Software Engineering Intern *Durango, CO*

- Contributed to full-stack development using Node.js and React; developed IoT solutions for a proprietary robot using AWS IoT Core.

LSST Physics Research Fellowship Jun. 2020 – Aug. 2020

Physics Research Intern *Stanford, CA*

- Developed an RNN to emulate the Rubin Observatory's deblending pipeline to better understand the systematic bias for weak lensing probes from unrecognized galaxy-galaxy blends.

Projects

Starling Mission Distributed System Control Analysis | *Matlab* Mar. 2023 – Jun. 2023

- Created report on NASA's Starling mission analyzing the Keplerian orbital mechanics, relative motion, linear formation flying dynamics, control perturbation-invariant formations, and nonlinear formation control.

Robotic Sheep Herder | *Python, ROS, Gazebo* Jan. 2022 – Apr. 2022

- Worked with a team to design and build hardware and software for a mechanical robot configured to navigate balls around a course.

American Sign Language 3D CNN | *PyTorch, NumPy* Mar. 2021 – Jun. 2021

- Fine-tuned 3D CNN model to identify American Sign Language. Spun up a Flask backend and React frontend to allow users to record a video of themselves signing a word for the model to output its top five predictions.

2D Plotter Robot with Bare Metal Raspberry Pi | *C, ARM Assembly, CAD* Sep. 2020 – Dec. 2020

- Worked on plotter robot, writing all the software from scratch on a bare metal Raspberry Pi.
- Voted the best project in course.

Technical Skills

Languages/Frameworks: C/C++, Python, Julia, Java Script; PyTorch, NumPy, CVXPY, Docker, Kubernetes