Henry Kanaskie

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Education

Oregon State University Corvallis, OR

Honors Bachelor of Science in Computer Science - 3.95 GPA *September 2022 – June 2026*

Relevant Coursework:

Data Structures & Algorithms, Databases, Software Engineering, Artificial Intelligence, Machine Learning, Deep Learning

Technical Skills

Languages & Frameworks: Python, C++, C, SQL, JavaScript, HTML, CSS, R, Assembly, VHDL, React, Flask
Developer Tools: Git, Google Cloud Platform, Fork, Jira, COMSOL, Simplicity Studio, Linux/Unix environments
Libraries: Pytorch, NumPy, Matplotlib, TensorFlow, Pandas, Scikit-learn, OR-tools

Experience

Software Engineering Intern | *Python, C, C++, SQL, React* March 2025 – September 2025

DZYNE Technologies *Portland, OR*

- Optimized embedded systems for anti-drone software using **C** and **C++**, ensuring modularity for future updates and products, cutting the development time by 23%
- Refactored the product automated testing system using **Python**, increasing testing efficiency by over 40%
- Developed a full-stack GUI with **React** and **Flask** that gave operators real-time control of power, tracking, movement, and logging, reducing response time during test runs

Undergraduate Researcher | *MATLAB, Python* May 2024 – June 2026

Plasma, Energy, and Space Propulsion Laboratory *Corvallis, OR*

- Developed an automated capacitor matching network algorithm using Google's **OR-tools** to dynamically tune impedance, maximizing power coupling and significantly reducing reflected power in RF plasma systems, speeding up the matching pipeline by 800%
- Engineered a high-performance signal denoising pipeline in **Python** to extract high-fidelity thruster diagnostic data from high-noise environments, improving Signal-to-Noise Ratio for health monitoring
- Accelerated plasma thruster research by 120% through the implementation of parallelized signal analysis programs in **MATLAB**
- Enhanced the predictive resolution of a cancer-focused plasma model by engineering high-dimensional features from 10M+ data points, improving model accuracy by 33% across diverse treatment parameters

Undergraduate Researcher | *VHDL* February 2024 – March 2025

Jason Clark Research Group *Corvallis, OR*

- Developed **VHDL** modules for FPGA-based Digital Signal Processing (DSP) to isolate and filter nano-ampere signals, achieving high-fidelity data acquisition for micro-sensor characterization
- Integrated artificial damping algorithms using Hardware-in-the-Loop testing with Moku instrumentation, improving sensor stability and reducing mechanical noise
- Designed comprehensive **VHDL** testbenches to simulate and validate signal responses, shortening the hardware debugging phase by facilitating rapid iterative prototyping

Projects

Bee Habitat Recommendation System | *Python, React, JavaScript, React* October 2025 – January 2026

- Designed a predictive tool for land managers and hobbyists to identify optimal plant species for local bee populations, leveraging sparse matrix factorization to model complex ecological relationships
- Developed a full stack AI recommendation engine using a truncated SVD to predict bee-flower interactions from Oregon Bee Atlas datasets, enabling data-driven habitat restoration

Character Classification Neural Network | *Python* June 2025 - July 2025

- Engineered and trained a Feed Forward Neural Network from scratch using Python, NumPy, and Pandas to classify handwritten characters from the EMNIST dataset with 85% test accuracy

Small Shell | *C* February 2025

- Implemented a lightweight, interactive shell in C for a Linux environment, featuring support for command execution, I/O redirection, background processes, and custom signal handling for SIGINT and SIGTSTP