

Jackson C. Hayward

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Education

University of Pennsylvania
Master of Computer Information and Technology (Computer Science)

May 2025
GPA: 3.66/4.00

University of Illinois at Urbana-Champaign
Bachelor of Science: Chemical and Biomolecular Engineering

May 2022
GPA: 3.54/4.00

Core Courses: Data Structures, Algorithms, Discrete Mathematics, Artificial Intelligence, Big Data Analytics, Machine Learning, Database Management, Operating Systems, Reaction Engineering, Thermodynamics, Control Systems, Systems Engineering

Skills

Languages: Python, Java, C, C++, HTML/CSS, SQL, MATLAB

Frameworks: Django, Spring Boot, Apache Spark, PyTorch, TensorFlow, Node.js, React.js

Tools: Git, GitHub, Docker, AWS, MySQL, REST API, CI/CD, Automated Testing, Documentation, Debugging, Linux, CAD

Soft Skills: Communication, Cross-functional Collaboration, Problem-Solving, Leadership, Adaptability, Teamwork, Autonomy

Projects

Astropy (Open Source) | [View Code](#)

- Contributed pull requests to a widely used scientific Python library, improving code clarity and enhancing automated testing functionality working within a large, collaborative codebase
- Practiced professional development workflows including Git, continuous integration, and peer code review processes
- Improved technical communication skills through writing clear, concise documentation for PRs where required

Modular Satellite Segmentation Pipeline | [View Code](#)

- Developed a modular deep learning pipeline for satellite image segmentation using SentinelHub REST API and TensorFlow (U-Net), supporting retraining on user-defined targets and KML export for geospatial visualization
- Automated satellite data preprocessing with normalization, band selection, resizing, and tiling for model training
- Built a lightweight classifier to filter input imagery and reduce false positives in downstream segmentation

Bookworm | [View Code](#)

- Collaborated with a team of 4 to develop and deploy a PostgreSQL database on AWS EC2, managing large datasets with over 433,000 ratings and 130,000 book records, and paired it with an interactive UI using Node.js and React.js
- Wrote and optimized SQL queries to enable efficient data retrieval for diverse book and user information.

Work Experience

Teaching Assistant, University of Pennsylvania (Remote)

Jan. 2025 - Present

- Delivered weekly 1:1 office hour to course of 330+ students, reinforcing foundational CS topics in Python and Java
- Developed personalized study plans and targeted explanations for students, boosting comprehension and retention
- Led structured reviews ahead of exams, focusing on key programming concepts, algorithms, and debugging strategies

Software Engineering Intern, University of Washington (Seattle, WA)

May 2024 – April 2025

- Developed an automated, scalable deep learning pipeline using nnU-Net architecture in Python for large scale image segmentation of 70,000+ medical images, collaborating with a team of software engineers and medical researchers.
- Preprocessed 1,500+ annotated CT scans by denoising, cropping, scaling, normalizing, and augmenting images to create robust training datasets for computer vision deep learning model development
- Presented findings and industry trends to 100+ physicians and medical physicists at the NWAAPM chapter meeting

Assistant Manager, Produce Department, Albertsons (Seattle, WA)

Dec. 2022 – Dec. 2024

- Led a team of 9 employees to achieve a new weekly sales record of \$92K (4% above the previous high) by accurately forecasting sales demand and effectively delegating tasks to department employees

Process Engineer Intern, PepsiCo (Riverside, CA)

May 2021 – Aug. 2021

- Optimized driver check-ins by digitalizing data transmission, cutting idle times by 65% and saving ~\$80K annually
- Co-designed a Tableau dashboard providing real-time shipment updates, enhancing data accessibility