Jackson C. Hayward

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Education

University of Pennsylvania May 2025
Master of Computer Information and Technology (Computer Science) GPA: 3.66/4.00

University of Illinois at Urbana-Champaign May 2022
Bachelor of Science: **Chemical and Biomolecular Engineering** GPA: 3.54/4.00

Core Courses: Data Structures, Algorithm Development, Discrete Mathematics, Artificial Intelligence, Big Data Analytics, Machine Learning, Database Management, Operating Systems

Skills

Languages: Python, Java, C, C++, HTML, CSS, SQL
Frameworks: Django, Spring Boot, Apache Spark, PyTorch, TensorFlow, Node.js, React.js
Tools: Git, GitHub, Docker, AWS EC2, Linux, UNIX, MongoDB, MySQL, REST API, CI/CD Pipeline, Cloud Computing, Unit Testing, Automation Frameworks, Automated Testing, Object-Oriented Design
Soft Skills: Communication, Collaboration, Problem-Solving, Leadership, Adaptability, Teamwork, Self-Starter

Projects

Glacial Lake Detector (ongoing) | View Code

- Curated a dataset of 5,000+ satellite images by preprocessing imagery from the SentinelHub API for training
- Built a U-Net segmentation model with Keras and TensorFlow to identify glacial lakes in satellite imagery using deep learning, with 5-fold cross-validation to improve robustness, and exported data to Google Earth for visualization

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, integrating with a React.js and Node.js full stack application
- Wrote and optimized SQL queries to enable efficient data retrieval for diverse book and user information.

Washington Trail Conditions | View Code

- Built a consumer-facing full stack Java web app with Spring Boot to display current and forecasted conditions for 3,700 Washington trails, sourcing data from the Washington Trails Association using object-oriented design principles
- Created user-friendly interfaces with interactive displays detailing trail conditions, backed by a MySQL RDS

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

- Collaborated with software engineers and medical researchers on cross-disciplinary team to develop an automated, scalable workflow for segmenting pulmonary nodules in CT scans using a U-Net–based framework with Python
- Processed 1,500+ annotated CT scans to train an artificial intelligence model that extracted 10,000+ nodules, achieving a 63% match rate against documented locations across a 72,000-scan dataset
- 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
- Managed inventory and reduced product shrink by optimizing daily order schedules and backstock levels

Supply Chain Intern, PepsiCo (Riverside, CA) Summer 2021

- Leveraged telemetry data to streamline the driver check-in process through digital transmission of cargo and route info, cutting wait times by 65% and saving ~$80K annually
- Co-designed a Tableau dashboard that incorporated real-time shipment tracking to improve supply chain visibility and support operational excellence