Jackson C. Hayward

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Education

University of Pennsylvania Expected May 2025
Master of Computer Information and Technology (Computer Science) GPA: 3.61/4.00

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 Design, Discrete Mathematics, Artificial Intelligence, Big Data Analytics, Machine Learning, Database Management, Operating Systems

Skills

Languages: Python, Java, JavaScript, C, C++, HTML, CSS, SQL
Frameworks: Django, Spring Boot, Apache Spark, PyTorch, TensorFlow
Tools: Git, GitHub, Bash, VS Code, Docker, Node.js, React.js, AWS, Linux, MongoDB, MySQL, REST API, UI/UX, Test Automation, Continuous Integration, Cloud Computing, Unit Testing

Projects

Glacial Lake Detector (ongoing) | View Code

- Curated a dataset of 5,000+ satellite images by preprocessing imagery from the SentinelHub API for training
- Building a U-Net segmentation model with Keras and TensorFlow to identify glacial lakes in satellite imagery, with 5-fold cross-validation to improve robustness
- Postprocessed model predictions into combined lake masks and exported KML files for geographic analysis

Washington Trail Conditions | View Code

- Built a 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 queried trail conditions, backed by a MySQL database for efficient trail search and filtering

Work Experience

Teaching Assistant, University of Pennsylvania 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
- Collaborated with instructors to improve course materials and address common student learning challenges

Software Engineering Intern, University of Washington (Seattle, WA) May 2024 – Present

- Collaborated with radiologists and AI researchers to develop an automated pipeline for segmenting pulmonary nodules in CT scans using the U-Net–based nnUNet framework
- Processed 1,500+ annotated CT scans to train a model that extracted 10,000+ nodules, achieving a 63% match rate against documented locations across a 72,000-scan dataset
- Presented findings to 100+ physicians and medical physicists at the NWAAPM chapter meeting

Albertsons, Assistant Manager, Produce Department (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

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

- Streamlined driver check-in process by enabling early digital transmission of cargo and route data, cutting wait times by 65% and saving ~$80K annually
- Co-designed a Tableau dashboard to improve shipment visibility and accessibility for supply planners