Javon Hickmon

javonh@uw.edu | Portfolio | LinkedIn

EDUCATION

University of Washington – BS/MS Computer Science (with Honors) *2021 - 2024*

- Cumulative GPA: 3.81/4.0
- Relevant Coursework
  - Machine Learning **(Graduate Course)**
  - Deep Learning **(Graduate Course)**
  - Introduction to Artificial Intelligence
  - Matrix Algebra with Applications

Olympic College - AA *2019 - 2021*

RESEARCH INTERESTS

My specific interests include Multimodal Machine Learning and Machine Learning Fairness. My goal is to utilize multiple modalities to create systems that can truly understand the semantics of our world and can effectively use this semantic knowledge in real-world interaction and prediction.

RESEARCH EXPERIENCE

Undergraduate Research Assistant – RAIVN Lab *Dec. 2022 - Present*

- Researched methods to leverage the knowledge contained within **Large Language Models** to improve **image classification** for **Multimodal Machine Learning** models.
- Utilized OpenFlamingo, an open-source Visual Language Model that aims to replicate **Google Deepmind's** Flamingo models.
- Wrote custom evaluation code, resulting in a **~15x** evaluation speedup while simultaneously decreasing the misclassification rate of our system.
- Independently wrote the implementation of **multimodal chain-of-thought** and showed consistently higher accuracies on a subset of 1,000 images from the ImageNet dataset.
- Mentored by **Dr. Ali Farhadi** and Sarah Pratt.

Undergraduate Research Assistant – Peleg Lab *June 2023 - Present*

- Created a novel **multi-object tracking and segmentation** algorithm that could track honeybees throughout the entirety of 5-minute-long videos without any loss in accuracy or spatiotemporal coherence.
- My algorithm outperformed XMem, a state-of-the-art **long-term video object segmentation** architecture. It achieved consistently higher long-term segmentation accuracies when evaluated in the context of our behavioral assay.
- Utilized **PyTorch** to update XMem to support MPS for inference MacOS, fixed bugs in the GUI, added support for video exporting, and updated the GUI to utilize the newer PyQT6.
- Mentored by **Dr. Orit Peleg**.

TEACHING & MENTORSHIP EXPERIENCE

Lead Teaching Assistant – University of Washington *Sept. 2023 - Present*

- TA for Introduction to Programming 1 supplemental course. I **developed new course materials**, assignments, and assessments with the instructor. **Wrote problems** for the midterm and hosted office hours with 30+ students.
- **Managed** and organized grading responsibilities for a team of 9 teaching assistants, ensuring fair and consistent evaluation of student work.

- Responded promptly to student inquiries and concerns, held additional office hours, and **academic support,** and assisted students in navigating course requirements.

Teaching Assistant – University of Washington *Mar. 2022 – Present*

- TA for Introduction to Programming 1, 2, and 3 supplemental courses.
- Assisted in the teaching, logistics, and **curriculum development** of the workshops for these courses. These workshops support first-generation, low-income, and underrepresented students in Computer Science at the University of Washington.
- Taught introductory Java programming concepts and hosted weekly 1-on-1 check-ins with five students per quarter. Received positive feedback from students and teaching assistants for my dedication to maintaining a supportive and enriching learning environment.

COM² Big/Little Mentorship Program – University of Washington *Oct. 2023 - Present*

- **Mentored** 3 first-year students for the Computing Community (COM²) Big/Little Mentorship Program within the Paul G. Allen School of Computer Science and Engineering.
- Provided academic and career guidance, fostering a sense of community and belonging for mentees. Communicated personal insights, reviewed resumes, and shared internship opportunities to further the professional development of my mentees.

LEAP Summer Research Panelist – University of Washington *Nov. 2023*

- Selected from a highly competitive pool of undergraduate students to speak about my summer research experience in the Peleg lab.
- Effectively communicated complex research methods, findings, and the significance of our work to a diverse group of peers, faculty, and researchers.

Allen School Research Roundtable Panelist – University of Washington *Apr. 2023*

- Spoke to 60 admitted Computer Science students about my experience performing research at the undergraduate level. Contributed to academic discourse and supported future researchers.

AP CSA Presenter – Code.org *Mar. 2022*

- Impacted thousands of students worldwide by utilizing innovative teaching methods and creative approaches to present Computer Science Principles in a fun and engaging manner for the **Code.org** AP Computer Science A curriculum.
- Promoted diversity, equity, and inclusion in Computer Science by providing my experiences and encouraging participation from students from underrepresented backgrounds.

Visiting Speaker – Bluffton Highschool *Dec. 2022*

- Shared my Computer Science journey with a class of 30 high school students. Offered guidance in their studies along with their future career pursuits.
- Facilitated discussions and Q&A sessions that allowed students to explore different subfields of Computer Science, while I simultaneously addressed any questions or concerns that arose.

PROFESSIONAL EXPERIENCE

SDE Intern – Amazon *June 2022 - Sept. 2022*

- Built technologies within a large, **distributed computing environment** that improved the experience of millions of Amazon sellers through a product titled EasyShip.
- **Designed and developed** features for batch shipping within the **full-stack** mobile application, focusing on **REST APIs**, high-quality code architecture, and **test automation**.

Lead Software Developer – CoMotion Labs *Sept. 2022 – Sept. 2023*

- Formed a project to advance Digital Literacy in marginalized communities worldwide. Digital Tether was entirely student-led and fully funded by CoMotion Labs.

- Led the development team to write the **full-stack** codebase for our primary product, a **Google Chrome** extension. Hosted weekly SCRUM meetings for a team of 4 software developers.
- Developed a **project management** system to foster collaboration among the development team. **Designed the architecture** of our codebase and implemented tools such as the Google Custom Search JSON API to gather data.
- Designed software to teach users methods of identifying signs of malicious websites, with the goal that they would migrate away from the platform and gradually gain digital literacy.

CONFERENCES PRESENTED

2023 SACNAS NDiSTEM Conference (Poster) *Oct. 2023*

- Honeybee Swarm Dynamics: Investigating the Relationship Between Individual Decision-Making and Collective Foraging

2023 UCLA National McNair Conference (Oral Presentation) *July 2023*

- Thinking Beyond Images: Using Chain-of-Thought Prompting to Harness the Power of Language in Multimodal Models

Paul G. Allen School Undergraduate and Master's Research Showcase (Poster) *May 2023*

- Thinking Beyond Images: Using Chain-of-Thought Prompting to Harness the Power of Language in Multimodal Models

CONFERENCES ATTENDED

Gabriel E. Gallardo Research, Student Leadership & Advocacy Symposium *2023*

CMD-IT/ACM Richard Tapia Celebration of Diversity in Computing Conference *2022*

HONORS

Google CS Research Mentorship Program Scholar *2023 – Present*

- Accepted to a three month program that matches students with Google mentors and peers to support their pursuit of computer science research pathways

Ronald E. McNair Post-Baccalaureate Achievement Scholar *2023 – Present*

- Selected from a competitive pool of students as a strong potential Ph.D. applicant

Leo Maddox Foundation Endowed Scholarship *2023 – Present*

Washington State Opportunity Scholar *2021 - Present*

Office of Minority Affairs and Diversity Merit Scholar *2022 - Present*

Bava Scholarship *2021 - Present*

Dean's List *2021 - Present*

President's List *2021 - Present*

TECHNICAL SKILLS

Python, PyTorch, TensorFlow, SQL, Java, JavaScript, React.js, HTML/CSS, C++, OpenCV, OpenGL, Figma, Unity, Matplotlib, NumPy, Java AWT, Java Swing, AWS, Google Cloud, Pandas, SciKit-Learn.

LEADERSHIP EXPERIENCE

Education Director – COM² (Computing Community) *May 2023 – Present*

- Founded this role because I saw a need for academic and skill-building events within the Allen School at the University of Washington. COM² is the largest fully student-led organization within UW CSE.

- Headed the development processes and led a team of 10 student leaders to create our Intro to React Workshop, Git Version Control Workshop, and Industry vs. Academia panel. These were some of the first skill-building workshops COM² has hosted since 2013.

Social Events Coordinator – COM² (Computing Community) *May 2022 – May 2023*

- Led all social event planning and execution by coordinating a team of 20 officers to create **more than 30** social events. **500+ CSE undergraduates**, graduate students, and professors attended our largest event.

Associate Officer – Association for Computing Machinery (now COM²) *May 2021 - May 2022*

- Planned and executed seven social events throughout the year. Our largest event had 350 attendees. Communicated with 20 team members and managed tasks efficiently.
- Raised **over $1200** in funds for non-profit organizations, such as Code.org, Black Girls CODE, and the U District Food Bank.

PROJECTS

XMem (contributor) *June 2023*

- **[ECCV 2022]** Long-Term Video Object Segmentation with an Atkinson-Shiffrin Memory Model. Used **Python** and **PyTorch** support for MPS Apple Silicon and implemented significant quality-of-life improvements to the GUI.
- Used by millions of users worldwide through tools such as Meta AI's **Segment Anything.**

tinyGAN *Jan. 2023*

- A **Generative Adversarial Network (GAN)** built from scratch without the use of Deep Learning libraries. Written to test my knowledge of the mathematics behind GANs.

Luna *Dec. 2021 - Jan. 2022*

- A practical, intuitive **3D graphics** engine. Used **Java, Java AWT,** and **Java Swing** to write the entire engine from scratch. Integrated the system with 3D scanning software, enabling the rendering of real-world scenes with high.
- Learned about **projection matrices**, geometric transformations, raycasting, clipping/culling, texture mapping, and **optimization** methods. Gained a deep understanding of the inner workings of **OpenGL**, one of the most common API's to interact with the GPU.

Delivr *July 2021 - Aug. 2021*

- A mapping web app that automates **complex route planning** while accounting for a myriad of potential obstructions. Catered towards equipment rental companies, who need to constantly plan routes to avoid small roads, potholes, and steep slopes.

MindHabit *Oct. 2021*

- Website created in 1 day for the 2021 DubHacks hackathon. Enriched study habits and improved students' mental health in a post-pandemic era by allowing users to manage tasks, listen to music, and read positive affirmations all in one location.

Weather *Dec. 2021 - Jan. 2022*

- A responsive weather app written in React.js with a user-friendly UX/UI. Displays current weather, future weather trends, and other pertinent meteorological information.