

Javon Hickmon

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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 **Fair Machine Learning**. 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**.

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.

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.

CONFERENCES PRESENTED

2023 SACNAS NDiSTEM Conference

Oct. 2023

- Honeybee Swarm Dynamics: Investigating the Relationship Between Individual Decision-Making and Collective Foraging [[poster](#)]

2023 UCLA National McNair Conference

July 2023

- Thinking Beyond Images: Using Chain-of-Thought Prompting to Harness the Power of Language in Multimodal Models [[presentation](#)]

STARS Celebration Conference

May 2023

Paul G. Allen School Undergraduate and Master's Research Showcase

- Thinking Beyond Images: Using Chain-of-Thought Prompting to Harness the Power of Language in Multimodal Models [[poster](#)]

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.

Portfolio Website

Nov. 2022 - Present

- Wrote my portfolio website from scratch using **React.js**, **CSS**, and **JavaScript**.
- Designed the **UI/UX**, iteratively modified the layout based on user feedback, and accounted for **accessibility** by utilizing high-contrast colors, large text, and interactive components.

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.