Jordan Cahoon

Curriculum vitae

Contact

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Education

Exp. 2024 **B.S. Computer Science**, *University of Southern California*, 3.86 GPA, Minor in Computational Biology & Bioinformatics

Research Experience

Oct 2022 - Present **Undergraduate Researcher**, *Advised by Luis A. Garcia*, Los Angeles, California, University of Southern California, Department of Computer Science

- Developed a non-invasive machine learning method to predict health worker stress with low level sensor data; the method uses weak supervision to detect local stress events to improve interpretability and accuracy.

Feb 2021 - Present **Undergraduate Researcher**, *Chiang Lab*, Los Angeles, California, University of Southern California, Keck School of Medicine

- Demonstrated inadequacy when deploying the state-of-the-art TOPMed Reference panel for imputation of non-European populations such as East Asian, South Asian, Oceanian, and Southeast Asian populations, thus exacerbating disparity in performing genome-wide genetic studies in diverse understudied populations.
- Designed a framework using meta-imputation to improve imputation quality in East and Southeast Asian cohorts, particularly for population-specific variants.
- Developed interactive map to visualize imputation statistics for over 120 populations from 39 publications.

Jun 2020 - Jan 2021 **Undergraduate Researcher**, *Tait-Wojno Lab*, Seattle, Washington, University of Washington, Department of Immunology

- Elucidated how the PGD2-CRTH2 pathway suppresses Type 2 intestinal immune response during helminth infections in murine models with single cell RNA sequencing analysis
- Conducted analysis to identify canonical markers of CD4+ t cell subsets in murine cecum and decipher t-cell diversity in the large intestine

Jul - Aug 2019 **Research Intern**, *Baliga Lab*, Seattle, Washington, The Institute for Systems Biology

- Developed electroporation protocol that facilitates transfer of CRISPR-Cas9 complex into *C. reinhardtii*
- Created and presented how nitrogen starvation increases lipid production in C. reinhardtii

Work Experience

Aug 2022 - Present **Artificial Intelligence Intern**, *The Ellison Institute for Transformative Medicine*, Los Angeles, California
- Developed deep learning models to automate the diagnosis for breast and prostate cancer from digital pathology
- Refined quality control pipeline to process thousands of whole slide images (WSI) on the cloud

May - Aug 2022 **Software Engineering Intern**, *Oracle Cloud Infrastructure*, Seattle, Washington
- Designed and tested automated daily health checks for cloud billing accounts

Jun 2021 - Present **Viterbi Student Ambassador, Content Lead**, *Viterbi School of Engineering Admissions*, Los Angeles, California, University of Southern California
- Led team of 12 students to produce bi-weekly virtual student panels about student life for audiences of 50-250 prospective engineering students
- Advertised panels through social media outreach, bi-weekly YouTube videos, and Spotify podcasts.

Abstracts and Publications

3 **Cahoon JL**, Rui X, Tang E, Simons C, Langie J, Chen M, Lo YC, Chiang CWK. Imputation around the world: Assessing imputation quality across diverse global populations. [Poster]. American Society of Human Genetics 2022 Annual Meeting. 2022 Oct 26, Los Angeles Convention Center.

2 Sheng X, Xia L,**Cahoon JL**, Conti DV, Haiman CA, Kachuri L, Chiang CWK. Inverted genomic regions between reference genome builds in humans impact imputation accuracy and decrease the power of association testing. Human Genetics and Genomics Advances. 2022 Nov 11. doi: 10.1016/j.xhgg.2022.100159.

1 Oyesola OO, et. al. *PGD2 and CRTH2 counteract Type 2 cytokine-elicited intestinal epithelial responses during helminth infection*.J Exp Med. 2021 Sep 6;218(9):e20202178. doi: 10.1084/jem.20202178.

Oral Presentations

Dec 2022 Assessing Imputation Quality for Diverse Populations, *Department Research Seminar, Center for Genetic Epidemiology, Keck School of Medicine*

Nov 2022 Predicting Foster Care Outcomes in the United States with the National Youth in Transition Database, *Artificial Intelligence for Sustainable Development Final Presentation*

Nov 2022 Detecting Chronic Stress in Medical Residents with Wearable Devices, *Fall CAIS++ Project Showcase 2023*

Apr 2022 Utilizing Reinforcement Learning to Predict Polyculture Formations, *Spring CAIS++ Project Showcase 2022*

Dec 2021 Modeling Malaria Outbreaks Utilizing Weather Factors, *Fall CAIS++ Project Showcase 2021*

Apr 2021 Predicting pandemic risk of Influenza mutations with Deep Learning , *Spring CAIS++ Project Showcase 2021*

Teaching Experience

Sep - Dec 2022 Curriculum Lead for open source deep learning curriculum for undergraduates

Jan - May 2022 Course Producer for CSCI 104, Data Structures and Objected Oriented Programming

Awards

Barry Goldwater Scholarship Nominee [Award Pending]

USC Viterbi Dean's List

USC Viterbi Undergraduate Merit Research Fellowship

USC Presidential Scholarship

USC Dornsife Thematic Option, Reading & Writing Honors

Leadership

Aug 2022 - Present **Co-President**, *The Center for Artificial Intelligence's Student Branch (CAIS++)*

Directs all organization initiatives including 5-8 semester projects, 4 Fall curriculum groups, 2 project showcases, weekly general meetings, and speaker events to engage undergraduates in artificial intelligence

Sep 2021 - May 2022 **Project Manager**, *Novus Think Tank*

Oversaw six focus project groups that targetted key social issues impacting the university and surrounding areas