

# Jordan Cahoon

## *Curriculum vitae*

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### Contact

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### Education

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

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### 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*

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### Work Experience

- Aug 2022 - May 2023 **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.

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## 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.

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## Oral Presentations

- May 2023 Imputation Efficacy Across Global Human Populations, *Southern California Evolutionary Genetics and Genomics Meeting 2023*, University of California Irvine.
- 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*, University of Southern California
- Nov 2022 Detecting Chronic Stress in Medical Residents with Wearable Devices, *Fall CAIS++ Project Showcase 2023*, University of Southern California.
- Apr 2022 Utilizing Reinforcement Learning to Predict Polyculture Formations, *Spring CAIS++ Project Showcase 2022*, University of Southern California
- Dec 2021 Modeling Malaria Outbreaks Utilizing Weather Factors, *Fall CAIS++ Project Showcase 2021*, University of Southern California.
- Apr 2021 Predicting pandemic risk of Influenza mutations with Deep Learning, *Spring CAIS++ Project Showcase 2021*, University of Southern California.

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## 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

Astronaut Scholarship Nominee [Award Pending]  
 Barry Goldwater Scholarship  
 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