

Sam Ghahremani

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EDUCATION

University of California, Berkeley

Aug. 2020 – May 2024

Bachelor of Arts in Computer Science and Minor in Data Science

Berkeley, CA

- **GPA:** 3.70 / 4.00
- **Advanced Coursework:** Data Structures, Statistics and Probability, Data Science, Computer Architecture, Algorithms, Artificial Intelligence, Machine Learning, Computer Security

RESEARCH EXPERIENCE

University of California, Los Angeles – HiLab

Feb. 2023 – Present

Research Intern

Los Angeles, CA

- Developed a configurable and customizable pipeline of tools to generate annotated training data of wheelchair users for detection and pose estimation without any real-world data.
- Developed a training methodology to fine-tune Detectron2's ImageNet pose detection model using synthetic wheelchair user data and demonstrated a mAP improvement of +7.04% and +98.15% in pose estimation and human detection respectively.
- Created scripts to effectively visualize over 500,000 unique images of wheelchair users.

University of California, Irvine – Monuki Lab

June 2020 – January 2022

Research Intern

San Francisco, CA

- Developed three annotation tools to categorize and collect specific morphologies of Biondi bodies, vacuoles, and fibrotic material, leading to a 70% reduction in data collection time compared to previous methods.
- Cleaned and unified two years' worth of data to fit modern laboratory standards and data pipelines.
- Constructed new training materials to shorten remote research training time by 30%.
- Created a unified SQL database and wrote complex queries for numerical and visual analysis.

University of California, Berkeley – Data Science Discovery Program

Sep. 2022 – Dec. 2022

Research Intern

Berkeley, CA

- Cleaned and organized over 2,000 entries of messy google sheet interview responses into a compact csv file.
- Developed a novel position generator to determine a teacher's social capital and interconnectedness.
- Created a custom visualization tool to showcase a specific teacher's social network between other teachers from other departments.

PUBLICATIONS

WheelPose: Data Synthesis Techniques to Improve Pose Estimation Performance on Wheelchair Users

Authors: William Huang, **Sam Ghahremani**, Siyou Pei, Yang Zhang

arXiv:2404.17063, ACM CHI 2024, 2024

Negative association between nodular stromal fibrosis and large lipid droplets in human choroid plexus epithelial cells

Authors: Michael J. Neel, Brett A. Johnson, Jessica M. Yeung, Aarij Gora, Ashley Nguyen, Juslyn Chan, Victoria Espericueta, **Sam Ghahremani**, William Huang, Jonathan Zebroski, Jackson Sousa, Nathan Schacherl, Kean Ehsani, Christina M. Magana-Ramirez, Peter Chang, Daniel Gillen, Edwin S. Monuki

Paper in preparation, 2024

Biondi body amyloid is spatially clustered in the human choroid plexus: A manual and deep learning-based study

Authors: Michael J. Neel, Brett A. Johnson, Natarsha Vukalovich, Parastou Porahang, Chloe Zhao, William Huang, **Sam Ghahremani**, Andy Lin, Olivia Sandhu, Binh Nguyen, Kasra Pejhanfar, Joni L. Ricksoddie, Peter Chang, Edwin S. Monuki

Paper in preparation, 2023

Individual and Alzheimers diseaserelated differences in Biondi body amyloid morphologies in human choroid plexus epithelial cells

Authors: Michael J. Neel, Brett A. Johnson, Todd Soo, Irene Nguyen, Natarsha Vukalovich, William Huang, **Sam Ghahremani**, Kimia Keshvardoot, Shuhao Chen, Zhohaer Muttalib, Seongjoon Won, Sara Khan, Michael Phelan, Edwin S. Monuki

Paper in preparation, 2024

Lipid storage by the human choroid plexus

Authors: Brett A. Johnson, Michael J. Neel, Todd Soo, Parastou Porahang, Frances A. Goyokpin, Sara Khan, Ryan S. Salehi, Nicolas B. Maramica, William Huang, **Sam Ghahremani**, Peter Chang, Edwin S. Monuki

Paper in preparation, 2024

POSTERS

Users in Wheelchairs (UIW) – A Human Centered RGB Dataset of Wheelchair Users

Authors: William Huang, **Sam Ghahremani**, Siyou Pei, Yang Zhang

2023

Building Teachers' Networks to Advance Climate Resilience

Authors: **Sam Ghahremani**, Atticus Ginsborg, Kristen Vitolo, Naama Sadan

2022

WORK EXPERIENCE

Racemappr

Jun. 2022 – Dec. 2023

Lead Data Science Intern

Virtual / Berlin, Germany

- Produced one of the largest up-to-date race event databases in the world with over 20,000 unique events based in Europe, the United States, Asia, and Australia.
- Utilized BeautifulSoup4, Selenium, and HTML Requests to scrape across 10 different race websites, along with numpy and pandas to clean and organize the scraped data.
- Created a duplication identification script that utilized machine learning to clean 10% of the cumulative company database
- Improved the previous broken codebase to a more streamlined script manager that is scalable and well-documented.
- Implemented multithreading to speed up scraping process by more than 4 times than what was previously used.
- Created a streamlined data pipeline utilizing PostgreSQL to speed up the time it took for web-scraped data to be pushed to live servers by more than 3 times the previous amount.

AWARDS

Third Place

Jan. 2021

QWER Hacks – Education Track