Zöe Steine-Hanson

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NSF Graduate Research Fellow and PhD Student developing machine learning models for naturalistic biological sensor data

Education

Sept 2019 – Anticipated June 2024 — **University of Washington**, GPA 3.82.
PhD Student in Computer Science
Masters of Computer Science - Completed June 2021

Sept 2015 – June 2019 — **Oregon State University**, GPA 3.96, Summa Cum Laude.
Honors Bachelor of Science in Computer Science

Research Experience

Sept 2019 – present — **Graduate Researcher**, University of Washington, Mentors: Dr. Bingni Brunton & Dr. Rajesh Rao.
- *Article:* Generalized Neural Decoders for Transfer Learning Across Participants & Recording Modalities
- Developed generalizable neural network model to decode neural data from unseen participants
- Our neural network performed 8% better than SOTA when generalizing to an unseen participant

Sept 2022 – Mar 2023 — **Research Scientist Intern**, Meta, CTRL Labs.
- Implemented machine learning models to detect movement classes from EMG-based wearables
- Analyzed model performance and trends for explainability
- Improved model performance in key user experience metrics

Sept 2018 – June 2019 — **Team Lead for Machine Learning Senior Design Project**, Oregon State University.
- Fine-tuned existing text-to-speech machine learning model to detect filler words in speech within .4-.8 seconds of latency

June 2018 – Aug 2018 — **Research Experience for Undergraduates**, University of Washington, Mentor: Dr. Andrea Stocco.
- *First Authored Article:* Refining the Common Model of Cognition Through Large Neuroscience Data
- Discovered model of intelligent minds that best explains human brain data out of comparable models

Sept 2016 – June 2019 — **Undergraduate Researcher**, Oregon State University, Mentor: Dr. Margaret Burnett.
- Relevant Publication: *From Gender Biases to Gender-Inclusive Design: An Empirical Investigation*, CHI 2019, `https://doi.org/10.1145/3290605.3300283`
- Investigated gender biases in user interfaces and discovered 7 best practices for unbiased interfaces
- Collaborated with companies and more than 10 universities to teach about gender biases in software
- Conducted and analyzed qualitative data from user studies

Skills and Coursework

Skills — C/C++, Python, Tensorflow, Pytorch, Pandas, Matplotlib, Scikit-learn, Jupyter, Bash, Matlab, Git, AWS

Research Areas — Human Computer Interaction, Transfer Learning, Machine Learning, Signal Processing, ECoG, EEG, EMG

Grad Courses — Neural Engineering, Computational Biology, Data Visualization, Natural Language Processing, AI and the Brain, Machine Learning, Neural Engineering Lab, Design and Analysis of Algorithms

Conferences and Awards

March 2023 — Cosyne 2023, Montreal, Canada. Presented abstract: "Neural Manifolds Underlying Naturalistic Human Movements in Electrocorticography"

April 2020 — Awardee - National Science Foundation's Graduate Research Fellowship Program

Dec 2018 — Brain Informatics 2018, Arlington, TX. Presented abstract: "Refining the Common Model of Cognition Through Large Neuroscience Data"

Sept 2018 — Grace Hopper Celebration 2018, Houston, TX