Hailey Joren

Curriculum Vitae — October 2023

haileyjoren.github.io
hjoren@ucsd.edu

Education

University of California San Diego 2021 – Present
Ph.D. in Computer Science GPA: 4.0/4.0
Advisor: Berk Ustun
Awards & Honors: Graduate Fellowship for STEM Diversity

Harvard University May 2019
B.A. in Computer Science, Cum Laude in Field Major GPA: 3.8/4.0
Awards & Honors: United States Presidential Scholar (2013), Patel Teaching Fellowship (2018), John. V. Kelleher Book Prize (2019), Horatio Alger State Scholarship (2013-2019), Bill and Melinda Gates Foundation Scholarship (2013-2019), Oracle Computing Research Scholarship (2017),

Research Interests

Areas: Deep Learning, Optimization, Generative Modeling
Topics: Uncertainty Quantification, Interpretability, Data-Efficiency
Domains: Healthcare, Finance, Physical Sciences

Work Experience

Twitter May 2021 – Oct 2021
Machine Learning Research Engineer, User Modeling
Developed a personalized value-scoring pipeline for improving recommendations interpretability
Investigated social graph properties using deep neural networks
Curated large datasets (10B+ samples) for recommendation and prediction tasks

Lendbuzz Oct 2019 – May 2021
Machine Learning Engineer
Developed computer vision models for detecting manipulations in digital financial documents
Researched methods for interpretabilility and recourse in risk-score approximation models

Meta Jun 2018 – Sep 2018
Software Engineering Intern
Built reviewing interfaces for human reviewers to measure model performance across groups
Investigated human-AI cooperation for content moderation

Preprints

1. Classification with Conceptual Safeguards
   Hailey Joren, Charles T. Marx, Berk Ustun
   Preprint – *Under Review*, 2024

Publications

Google Scholar

1. Participatory Personalization in Classification
   Hailey Joren, Chirag Nagpal, Katherine Heller, Berk Ustun
   NeurIPS – *Neural Information Processing Systems*, 2023
   Spotlight – Top 10% of Accepted Papers
2. DYffusion: A Dynamics-informed Diffusion Model for Spatiotemporal Forecasting
   Salva Rühling Cachay, Bo Zhao, **Hailey Joren**, Rose Yu
   NeurIPS – *Neural Information Processing Systems*, 2023
3. Learning Document Graphs with Attention for Image Manipulation Detection
   Hailey Joren, Otkrist Gupta, Dan Raviv
   ICPRAI – *International Conference on Pattern Recognition and Artificial Intelligence*, 2022

4. MRZ code extraction from visa and passport documents using convolutional neural networks
   Yichuan Liu, **Hailey Joren**, Otkrist Gupta, Dan Raviv
   IJDAR – *International Journal on Document Analysis and Recognition*, 2022
5. Printing and Scanning Investigation for Image Counter Forensics
   Hailey Joren, Otkrist Gupta, Dan Raviv
   EURASIP – *Journal on Image and Video Processing*, 2021

Workshop Papers

1. Participatory Personalization for Personalized Prediction
   Hailey Joren, Chirag Nagpal, Katherine Heller, Berk Ustun
   NeurIPS – *Workshop on Participatory Approaches to AI for Mental Health Workshop*, 2023
   Selected for Oral Presentation
2. Probabilistic Bias Mitigation in Word Embeddings
   Hailey Joren, David Alvarez-Melis
   NeurIPS – *Workshop on Human-Centric Machine Learning*, 2019

Teaching Experience

Teaching Assistant 2023 – Ongoing
University of California San Diego
Teaching Assistant for graduate course CSE258: Recommendation Systems and Web Mining for Professor Julian McAuley

Lecturer and Teaching Assistant 2019
AddisCoder
Created curriculum, gave lectures, and worked individually with students in summer computer science course for 180 top Ethiopian high school students
Led 40 teaching assistants in course planning, curriculum development, and student instruction

Teaching Fellowship 2018
Harvard Patel Fellow
Led teaching staff in implementing pedagogical practices to support students of diverse backgrounds
Taught functional programming to students in individual and small-group sessions 5-7 days per week
Employed data management practices to track student progress and validate pedagogical choices

Leadership & Service

Mentorship Director 2023 - Ongoing
UCSD Graduate Women in Computing
Running mentorship program with over 150 participants, matching experienced students to incoming students from underrepresented backgrounds
Serving on the GradWIC (Graduate Women in Computing) board for 2023-2024

Conference Reviewer 2022 - Ongoing
ICLR 2024, NeurIPS 2023, NeurIPS 2022

Community Director 2017
Harvard Women in Computer Science (WiCS)
Planned and coordinated events for Harvard Women in Computer Science (WiCS)
Supported community-building activities and outreach efforts with faculty and other affinity groups

Personal

Citizenship: United States and Canada
Languages: Fluent in English and French
Software: Proficient in Python, PyTorch, Tensorflow, OCaml & SQL. Familiar with Java & PHP.
Interests: Open-Water Swimming, Cycling, Triathlon, and Urban Gardening