

Hailey Joren

CURRICULUM VITAE — JANUARY 2024
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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

Relevant Coursework: Statistical Learning; Deep Generative Models; Graduate Machine Learning; Trustworthy Machine Learning; Interpretable & Explainable ML; Computer Security & Privacy; Convex Optimization; Mathematics of Deep Learning;

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)

Relevant Coursework: Advanced Topics in Data Science; Intro to Machine Learning; Critical Thinking in Data Science; Data Science I; Research Topics in Human-Computer Interaction; Probability; Theory of Networks; Theory of Computation; Programming Fundamentals; Functional Programming; Linear Algebra; Privacy and Technology; Discrete Mathematics

RESEARCH INTERESTS

Areas: Deep Learning, Optimization, Generative Modeling

Topics: Uncertainty Quantification, Interpretability, Data-Efficiency

Domains: Healthcare, Finance, Physical Sciences

WORK

Twitter

MAY 2021 – OCT 2021

EXPERIENCE

Machine Learning Research Engineer, User Modeling

Developed a personalized value-scoring model for improving recommendation interpretability. Investigated social graph properties using deep neural networks.

Technical Tools: Python, PyTorch, BigQuery, GCP, Presto, Git

Lendbuzz

OCT 2019 – MAY 2021

Machine Learning Engineer

Developed computer vision models for detecting manipulations in digital financial documents. Researched methods for interpretability and recourse in risk-score approximation models.

Technical Tools: Python, PyTorch, Tensorflow, Git

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.

Technical Tools: Python, Hack (PHP)

PUBLICATIONS

[Google Scholar](#)

1. [Classification with Conceptual Safeguards](#)
Hailey Joren, Charles T. Marx, Berk Ustun
ICLR – *International Conference on Learning Representations*, 2024
Top 10% among submissions
2. [Participatory Personalization in Classification](#)
Hailey Joren, Chirag Nagpal, Katherine Heller, Berk Ustun
NeurIPS – *Neural Information Processing Systems*, 2023
Spotlight – Top 10% among submissions

3. [DYffusion: A Dynamics-informed Diffusion Model for Spatiotemporal Forecasting](#)
Salva Rühling Cachay, Bo Zhao, **Hailey Joren**, Rose Yu
NeurIPS – *Neural Information Processing Systems*, 2023
4. [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
5. [MRZ code extraction from visa and passport documents using convolutional neural networks](#)
Yichuan Liu, **Hailey Joren**, Otkrist Gupta, Dan Raviv
IJ DAR – *International Journal on Document Analysis and Recognition*, 2022
6. [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, Harvard University
Teaching Assistant for graduate course CSE258: Recommendation Systems and Web Mining for Professor Julian McAuley
Patel Teaching Fellow for undergraduate course CS51: Functional Programming for Professor Stuart Shieber

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

ACADEMIC
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
NeurIPS 2023, NeurIPS 2022

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