

# Hailey Joren

CURRICULUM VITAE — JUNE 2023

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EDUCATION	<b>University of California San Diego</b> PhD in Computer Science Advisor: Berk Ustun <b>Research Topics:</b> Human-Centered Machine Learning, Interpretability, Generative Modeling, Natural Language Processing <b>Relevant Coursework:</b> Statistical Learning; Deep Generative Models; Graduate Machine Learning; Trustworthy Machine Learning; Interpretable & Explainable Machine Learning; Computer Security & Privacy; Convex Optimization; Mathematics of Deep Learning;  <b>Harvard University</b> BA in Computer Science, Cum Laude in Field <b>Relevant Coursework:</b> 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	PRESENT GPA: 4.0/4.0  MAY 2019 Major GPA: 3.8/4.0
INDUSTRY EXPERIENCE	<b>Twitter Cortex</b> <i>Machine Learning Research Engineer, User Modeling</i> Investigated social graph properties using large deep neural networks Curated and cleaned large datasets (10B+ samples) Developed a scalable personalized value scoring pipeline for user recommendations using Python, BigQuery, and GCP  <b>Lendbuzz</b> <i>Machine Learning Engineer</i> Explored methods for explainability in risk-score approximation models Developed and deployed three novel computer vision methods for detecting manipulations in digital documents using Python, Pytorch, and Tensorflow, improving upon current state-of-the-art methods Submitted each of these research projects to AI/ML conferences (see publications)  <b>Facebook</b> <i>Software Engineering Intern</i> Investigated content moderation for financial fraud and scam using human-AI cooperation Built reviewing interface for human reviewers to measure model performance and create training data with billions of samples using Hack (PHP), Python	MAY 2021 – OCT 2021  OCT 2019 – MAY 2021  JUN 2018 – SEP 2018
AWARDS & HONORS	United States Presidential Scholar Oracle Computing Research Scholarship Patel Teaching Fellowship Bill and Melinda Gates Foundation Scholarship Horatio Alger State Scholarship John. V. Kelleher Book Prize UC San Diego Best Paper Award in Convex Optimization	2013 2017 2018 2013 – 2019 2013 – 2019 2019 2023

## PUBLICATIONS

[Google Scholar](#)

1. [Participatory Systems for Personalized Prediction](#)  
**Hailey Joren**, Chirag Nagpal, Katherine Heller, Berk Ustun  
Oral Presentation – *NeurIPS Workshop on Participatory Approaches to AI for Mental Health*, 2022
2. [Probabilistic Bias Mitigation in Word Embeddings](#)

**Hailey Joren**, David Alvarez-Melis  
*NeurIPS Workshop on Human-Centric Machine Learning*, 2019

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. [Printing and Scanning Investigation for Image Counter Forensics](#)

**Hailey Joren**, Otkrist Gupta, Dan Raviv  
*EURASIP Journal on Image and Video Processing*, 2021

LEADERSHIP  
& SERVICE

**AddisCoder** 2019

*Lecturer and Teaching Assistant*

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

Was promoted to lecturer part-way through the program

**Harvard Patel Fellow** 2018

*Teaching Fellowship*

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

**Harvard Women in Computer Science (WiCS)** 2017

*Community Director*

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.

**Organizations** GradWIC (Graduate Women in Computing)

**Interests** Open-Water Swimming, Cycling, Triathlon and Urban Gardening