

Matthew Shu

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Education

Yale University: Statistics & Data Science and Sociology

2021 - May 2025

Relevant Courses: AI Foundation Models, Real Analysis, Machine Learning, Data Structures, Algorithms, Theory of Statistics, Linear Algebra, Discrete, Multivariable Calculus, Data Exploration & Analysis, Measuring Culture, Sociology of Education

Awards: Angels Wings Scholarship (\$10,000), Hadden Scholar (\$4,000 per year for 4 years)

Experiences

Uber

UberSTAR Software/Machine Learning Engineer Intern

Tensorflow, PyTorch, Optuna, Huggingface, LLMs

Summer 2023

- Developed image-text item classification model (+.7% accuracy). Piloted LLMs to improve dataset quality (projected +3% accuracy)
- Performed hyperparameter optimization to identify weights used in global search experiment deployed to all UberEats users
- Brought 5x speed up in side-by-side search comparison tool, 10x speed up in hyperparameter optimization tool

Podsie

Full-Stack Software Engineer

React.JS, Ruby on Rails, PostgreSQL, EdTech

September 2022 - Present

- Developed features such as bulk question creation and leaderboards to increase engagement in thousands of EdTech users

Human-Computer Interaction Institute at Carnegie Mellon University

Research Intern, under Prof. Brad Myers and Amber Horvath

React.JS, Figma

June 2022 - August 2022

- Using React.JS, introduced filtering and sorting of relevant notes in Visual Studio Code extension for programmers

University of Maryland at College Park

Research Intern, under Prof. Jordan Boyd-Graber and Shi Feng

NLP, Python, Vue.JS, SQL, Docker

January 2019 - Present

- Developing AWS-deployed [KAR³L Flashcards](#) AI app to better long-term learning: EAACL HCI+NLP 2021 Workshop, update planned
- Investigated bias in question answering systems with ambiguity: [paper](#), EMNLP 2021 Workshop
- Coordinated 2021 [QANTA](#) question answering dataset update

Technaplex Software

iOS Developer, Co-Founder

Swift, Fastlane

June 2018 - June 2022

- Created [Flashcard Adder](#) (~1000 downloads) and the quizbowl question database [QuizDB for iOS](#) (~5000 downloads)

Montgomery Blair High School

Curriculum Writer, Analysis of Equity in STEM

Sociology of Education, Teaching

January 2021 - August 2021

- Created course outline and lessons inspired by my research and experiences as a low-income STEM student, first taught Spring 2022

Projects

The Evolution of Country Music

Country Music Subgenres Across Gender and Time

Computational Social Science, RMarkdown, Jupyter Notebook

Spring 2022

- Created largest dataset (5K+) of full country music lyrics & metadata, analyzed with structural topic models and other NLP methods.

Mindful.ly

Promoting Conscientious Work and Play

Swift, Firebase

Fall 2020

- Formulated idea, led development for simplified time tracker: [IvyHacks 2020](#) Best Remote Education and Work Hack out of 169 projects

Maskif.ai

Masks are the Key for Entry

Swift, AVFoundation

Fall 2020

- Developed iOS client for smart lock app using computer vision to detect mask-wearing: [YHack V. 2020](#) Overall Prize out of 41 projects

Activities & Leadership

Yale Poorvu Center for Teaching and Learning

Pedagogical Partner for Statistics & Data Science Senior Capstone Seminar

Teaching

August 2022 - Present

- Co-leading program of 10 pedagogical partners to support faculty in developing and teaching courses across the sciences and humanities
- Worked with professor and students in two data science classes to improve learning through classroom observation and interaction

CS50: Intro to Computer Science at Yale

Teaching Assistant

Python, C, Teaching

August 2022 - December 2022

- Co-taught weekly supplementary lecture to small cohort of students and hosted office hours to help students with assignments

Yale Statistics & Data Science Student Advisory Committee

Committee Member

Logistics

April 2022 - Present

- Organizing events such as game and trivia nights to connect the Statistics & Data Science Committee at Yale

Splash at Yale

Splash Spring 2022 Director, Admin Team, Class Teacher

Teaching, Logistics

September 2021 - Fall 2023

- One of two directors for Splash Spring 2022, where Yale students teach a one-day class about their interests to 7-12th grade students

Skills

Languages: Human (English/Chinese/Thai), Swift, Python, SQL, R, C, Java, HTML/CSS/Javascript, Typescript, Lisp, Bash

Tools: PostgreSQL, FastAPI, SQLAlchemy, Vue, React, Docker, Traefik, Tidyverse, SpaCy, Pandas, PyTorch, Fastlane, Git