Alex Huang

📍 Chicago, Illinois   ✉ alhu@uchicago.edu   📞 (714) 686-9666   🔗 ashlab.net

Education

MS   **University of Chicago**, Applied Mathematics   Sept 2022 – May 2025
- GPA: 3.9/4.0
- Relevant Courses: Functional Analysis, Online Learning, Combinatorics, Algorithms, Nonlinear Optimization, Machine Learning, Deep Learning Systems, Computer Vision, Numerical Linear Algebra

BS   **Columbia University**, Operations Research: Financial Engineering   Sept 2018 – June 2022
- Minor: Applied Math
- GPA: 3.95/4.0; Magna Cum Laude, Tau Beta Pi (Honors Society Inductee)
- Teaching Assistant: Statistics and Data Analysis, Advanced Optimization
- Relevant Courses: Real Analysis, PDE, Game Theory, Stochastic Processes, Statistics, Linear & Convex Optimization, Simulation Modelling, Applications Programming

Research Experiences

Research Intern – **Chicago, Illinois**   Mar 2025 – present
Advised by Dr. Pranav Nuti (Principal Researcher) and Prof. Rad Niazadeh
- University of Chicago Booth School of Business
- Working on relaxing the uniform random arrival order assumption in secretary problem variants, specifically for matchings over edge-weighted bipartite graphs with vertex arrivals

Master's Thesis – **Chicago, Illinois**   Sept 2024 – Apr 2025
Advised by Prof. Cong Ma
- Investigated convergence properties and performance of scaled gradient descent (ScaledGD) in low rank adaptation (LoRA) fine-tuning in large-language models

Work Experience

Machine Learning Engineer, Fireball Information Technologies – New York, New   July 2022 – Jan 2024
York
- Developed and managed low-latency deep learning pipeline for wildfire detection, training models for smoke polygon detection and horizon tracing in remote sensing imagery
- Implemented precise geo-referencing algorithms, camera calibration tools, and parameter tuning applications using Python and InfluxDB

Backend Developer Intern, Couchers.org – New York, New York   June 2021 – Aug 2021
- Developed and maintained APIs in Python using gRPC framework with PostgreSQL/PostGIS database
- Implemented user personalization features using social graph analysis and geospatial data

Independent & Course Projects

Modeling NYC Taxi Profitability – **New York, New York**   June 2021
Joint work with Aapeli Vuorinen
- Analyzed NYC Open Data on taxi trips and modeled neighborhood profitability using PageRank-like concept
- Built a Leontief-style model (Python, Pandas) and constructed theories on optimization of taxi driver decision-making

Teaching

IEOR 4307 (Statistics and Data Analysis) Teaching Assistant   Fall 2020
Columbia University; Instructor: Kaizheng Wang

IEOR 3609 (Advanced Optimization) Teaching Assistant   Spring 2021
Columbia University; Instructor: Shipra Agrawal

Volunteering

Head Cook/Kitchen Organizer, St. Stanislaus Kostka Church – Chicago, Illinois   Sept 2023 – June 2024
- Committed six hours every Monday for eight months, while training and onboarding new volunteers to sustain kitchen operations
- Organized and served meals for over 150 community members per session during Chicago's migrant crisis

Skills

Programming Languages & Databases: Python, PostgreSQL

Libraries & Frameworks: Torch, scikit-learn, pandas, NumPy, Matplotlib, networkx, others

Extracurricular Interests: generative image & video models, cooking, competitive Tetris, tennis