Kevin Lim

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EDUCATION

The University of Chicago — Chicago, IL
BS/MS Computer Science, BS Mathematics — Expected June 2025

Relevant Coursework: Abstract Algebra, Advanced Algorithms, Complexity Theory, Computer Architecture, Computer Networks, Computer Systems, Discrete Math, Linear Algebra, Machine Learning, Mathematical Probability, Ordinary Differential Equations, Real Analysis

Awards: Putnam Mathematics Contest – Top 25%

TECHNICAL SKILLS

Programming Languages: Python (Django, NumPy, TensorFlow), C, C++, JavaScript (Node.js), R, SQL (MySQL)
Familiar With: REST API Architecture, MongoDB, Versioning Control (Git), Networking Protocols (TCP/UDP)

PROJECTS

Hyperparameter Tuning using Bayesian Optimization
Python (NumPy, PyTorch)

- Implemented the Bayesian Optimization algorithm with Gaussian process regression to model the hyperparameter space of a convolutional neural network, allowing for the efficient tuning of hyperparameters with limited training.
- Model performance matched that of a conventionally tuned CNN (grid search, random search) with 3-10x decrease in tuning time.

Generative Model Image Completion for Handwritten Digits
Python (NumPy)

- Designed a Bernoulli Mixture Model to complete partial images of handwritten digits from the MNIST dataset.
- Implemented an iterative expectation-maximization (EM) algorithm in native NumPy to estimate latent parameters.
- The resulting model could correctly complete partially obscured drawings of digits to a human-readable standard in over 95% of cases.

WORK EXPERIENCE

SIGMA Lab @ UChicago — Chicago, IL
Research Assistant — June 2023 – June 2024

- Designed and implemented optimization algorithms using Python to model strategic interactions between adversarial agents, gaining valuable experience with popular computational frameworks/tools such as NumPy, scikit-learn, PyTorch, and Gurobi.
- Utilized a variety of optimization techniques such as simulated annealing, mixed-integer linear programming, and Bayesian Optimization.

UChicago Mathematics Department — Chicago, IL
Course Assistant — September 2023 – March 2024

- Fall 2023: Led tutorial sessions twice weekly for students in MATH 10500 Fundamental Mathematics I at the University of Chicago. Responsibilities included fielding individual questions and administering assessments, as well as grading weekly problem sets.
- Winter 2024: Grader for advanced calculus course MATH 18300 Mathematical Methods in the Physical Sciences I.

Steamoji — Vancouver, BC
Facilitator — July 2022 – September 2022

- Led STEM-focused lessons for middle- and high-school students on topics such as mathematics, programming, engineering, and robotics.

COMMUNITY LEADERSHIP

UChicago Badminton Club – Logistics Director — September 2022 – June 2024

- Developed a RESTful API architecture for the club badminton website using Express.js and MongoDB, servicing over 200 members by facilitating court signups.