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Education

Massachusetts Institute of Technology (MIT), Cambridge, MA **May 2025**

- Candidate Bachelor of Science in Computer Science and Engineering and Bachelor of Science in Mathematics
- GPA: 5.0/5.0
- Past Coursework: Distributed Systems, Design and Analysis of Algorithms, Natural Language Processing (NLP), Introduction to Deep Learning, Fundamental of Statistics, Fourier Analysis

Relevant Skills

- **Computer Science:** Algorithms, Data Structure, Distributed System, Database, Machine Learning, NLP
- **Programming Language:** Python, C++, bash, JavaScript, Go, git, MySQL, pandas, pytorch, numpy
- **Other:** Leadership, Collaboration, and Communication
- **Mathematics:** Probability, Statistics, Linear Algebra, Group Theory

Awards

- Honorable Mention for Putnam Competition 2023. Ranked 43 out of more than 4000 participants from over 400 colleges in North America. Competition involved solving college-level mathematical problems that require mathematical creativity typically not seen in class
- Gold Medal for International Mathematical Olympiad 2020. Ranked 22 out of 616 participants from 105 countries. Competition involved solving mathematical problems that emphasized ingenious approach rather than sophisticated mathematical knowledge

Experience

Voleon Group **May 2024 – August 2024**

Software Engineering Intern

- Optimizing runtime performances of simulators that are used by quantitative researchers
- Comparing and reporting differing performances of several data analysis libraries (pandas, polars, ibis, and pyarrow)
- Taking advantage of pybind to allow integrations between python and C++ codebases

MIT Institute for Data, Systems, and Society, Cambridge, MA **Feb 2023 –May 2024**

Undergraduate Researcher – Trustworthy Deep Learning

- Investigated the implicit regularization and generalization properties that arises from training attention mechanism using mirror descent (an important generalization of gradient descent) through experiments
- Deduced theoretical proofs on the implicit regularization properties that was seen in the experiments

Micronotes.ai, Boston, MA **May 2023 – Aug 2023**

Machine Learning Intern

- Trained models using multiple data sources in order to predict a call list that maximizes offer acceptance, resulting in a model that placed 50% of positive samples in the top 20% of call list
- Implemented feature selection module for a dataset with ~200M records and ~10K columns, down to ~200 columns, using PySpark and Azure Databricks, emphasizing reconfigurability and reusability.

Harvard-MIT Division of Health Sciences and Technology, Cambridge, MA **Sep 2022 – Feb 2023**

Undergraduate Researcher – Measuring Impact of Physician-Scientists on Innovation, Research, and Economy

- Set up and designed several MySQL databases and collected, merged, and stored data to those databases through Python scripts with cross-functioning partners, allowing data to be analyzed easily through a centralized database
- Managed a GitHub repo to track code changes and improve collaboration and software implementation velocity.

Class Projects

Improving Accuracy and Mitigating Bias and Uncertainty of Vision System Competition

- Weighted the probability distribution of the training samples during training, allowing biased samples to be sampled less frequently, and letting the architecture learn under-represented features better
- Used dropout on the convolution layers of the system, which increases regularity by simulating the effect of ensembling multiple copies of the model while saving computation cost