Eric Yang

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Education

Massachusetts Institute of Technology Expected 2028
Computer Science and Engineering (6-3) GPA: 5.0/5.0

- **Relevant coursework:** Algorithms (G), Linear Algebra, Machine Learning, Computer Architecture
- **Activities:** MIT Informatics Tournament Software Exec, Chamber Music Society, OrigaMIT

Experience

Engineering Intern, Tandem Technology, Inc. Jan 2025
New York, NY

- Designed and implemented a new pipeline using OCR techniques and LLMs for automated insurance card processing, reducing error rate by ~85% and cost by >10x
- Developed a new testing framework integrated with existing AWS infrastructure to efficiently test models

Infrastructure Lead, Lexington Informatics Tournament (LIT) May 2021 – July 2024

- Built infrastructure from scratch using GCP and Docker to host cybersecurity competition with 1400+ teams
- Created a tool to securely isolate challenges and create on-demand instances with Python, Docker, and Flask, reducing active containers by ~20x
- Wrote 30+ pages of infrastructure documentation to support future development and maintenance

Summer Researcher, University of West Georgia June 2021 – September 2021

- Investigated spanning trees and constructed cyclic base orderings in different classes of graphs, with applications in network connectivity
- Extended previous results to prove the existence of cyclic base orderings in certain 2-degenerate graphs
- Published in journal *Discrete Applied Mathematics* (https://doi.org/10.1016/j.dam.2024.11.022)

Projects

Optimized BF Interpreter

- Built interpreter for the BF language in C++, achieving ~1000x speedups over naive implementation
- Utilized intermediate representations, jump tables, linear optimizations, and bitwise compression
- Won 1st in HackMIT 2024 optimized interpreter challenge, winning $1000

Discord Graph eyangch.github.io/discord-graph

- Visualization tool to display connections between friends on the social media app Discord using Javascript, d3.js, and Discord API's mutual friends feature

BattleClowns (MIT Battlecode)

- Ranked 3rd internationally in MIT Battlecode HS Division
- Designed and implemented heuristic strategies with distributed algorithms, pathfinding, and data compression
- Wrote 25000+ lines of code, used Java, Git and Gradle to collaborate efficiently with teammates

Awards

- **USA Computing Olympiad (USACO) 2023 Finalist:** Ranked among top 26 high school competitive programmers out of 20000+ competitors and attended USA team selection camp
- **PicoCTF 2023 Winner:** 2nd among ~7000 teams in Carnegie Mellon's premier international offensive cybersecurity competition on web, reverse engineering, cryptography, and forensics, binary exploitation
- **USA Physics Olympiad (USAPhO) 2023 Bronze Medalist:** Top 150 in USA's premier physics contest

Skills

Languages: C/C++, Python, JavaScript, TypeScript, Assembly, Java, HTML, CSS, SQL
Frameworks/Tools: GCP, AWS, Docker, K8s, Flask, PyTorch, Numpy, Node.js, Playwright