Michael Zhou

📞 734-556-2189 | ✈ mhzhou@andrew.cmu.edu | 🌐 michaelzhou.net | ⦿ /mzhou08 | in /michaelhzhou

EDUCATION

Carnegie Mellon University | Pittsburgh, PA — May 2025
Bachelor of Science in Computer Science | Algorithms & Complexity Concentration — GPA: 4.0/4.0
- Coursework: Functional Programming, Parallel & Sequential Algorithms, Software Engineering, Computer Systems, Distributed Systems, Mathematical Finance, Theoretical CS, Probability and Computing, Machine Learning (Ph.D.)
- Awards and Honors: SCS Dean's List High Honors (All Semesters), 2022 Carnegie Mellon x Goldman Sachs Quantathon Finalist

SKILLS

Programming Languages: Advanced in Python, C, C++, JavaScript, TypeScript, Standard ML, Julia. Learning Golang, Rust, Java
Tools & Frameworks: OOP, Pandas, NumPy, PyTorch, SQL, MongoDB, React, FastAPI, Flask, Docker, AWS, GCP, Git, Linux, Bash
Awards: 5x AIME Qualifier (Score: 8), National Chemistry Olympiad Honors Top 150 (2x Finalist), Congressional Art Competition Winner

EXPERIENCE

Lawrence Livermore National Laboratory — May 2023 – Aug 2023
Research Intern | Applied Machine Learning for Cybersecurity — Livermore, CA
- Pursuing self-directed research on encrypted traffic classification, and orchestrated virtual machines for synthetic data collection
- Used enhanced ML models and anomaly detection algorithms to isolate cyber-attack patterns from encrypted network data

T-AI: Artificial Intelligence Teaching Assistant ⧉ — Feb 2023 – Present
Co-Founder — Pittsburgh, PA
- Early-stage startup building an AI-augmented learning assistant for freely available educational videos
- Designed modular AI pipeline architecture enabling 5x feature development speed, and led efforts in user studies and business plans
- TartanHacks 2023 Grand Prize, and Best Use of Google Cloud Award

Carnegie Mellon University School of Computer Science — Spring 2023, Fall 2023
Teaching Assistant | 17-313: Foundations of Software Engineering, 07-180: Concepts in AI — Pittsburgh, PA
- Designed and tested assignments, held weekly office hours, and taught supplementary recitations for 100+ students
- Authored course notes, held review sessions on Q-learning, MDP's, decision trees, perceptrons, logistic regression, and KNN

Quantedge Capital — May 2022 – Aug 2022
Software Engineering Intern | Authentication & Authorization — Singapore, Singapore
- QAuth Team: built an authentication & authorization service for a $3bn+ hedge fund, for use in all internal applications
- Created an object-oriented permission syntax with group inheritance for efficient and granular permission assignment
- Developed Python library, designed to mirror API code structure, for integration of QAuth features into codebases
- Engineered an algorithmic trading client, collaborated with quantitative researchers to design and implement VWAP and arrival price trading strategies; achieved 100% success rate of trading completion across 400+ trading day runs
- Wrote a Python Websocket stock exchange supporting 20+ algorithmic agents trading simultaneously and 13x-speed trading day simulations for up to 50,000 actions/hour; drafted system architecture for parallel runs and log collection

LearningClues — Jun 2021 – Jan 2023
Full-Stack Software Engineer, Team Lead | LTI Integration and Studyguide — Ann Arbor, MI
- Spearheaded product discovery, prototyping, and ideation efforts for Studyguide, which is the new company direction
- Implemented Learning Tools Interoperability (LTI) endpoints, enabling integration with popular learning platforms
- Added security checks to a Flask API endpoint used for 600+ classes, restricting users to current course content

PROJECTS

Transformer-Based Question Answering & Generation ⧉
- Architected and implemented a pipeline to answer & generate questions of varying difficulties from Wikipedia articles
- Designed a Machine Learning system around model limitations and performance, utilizing modern NLP techniques
- Fine-tuned the Google T5 Large Language Model on synthetic datasets for improved accuracy and restrained response length

ClickShare
- Created screen-sharing application that projects clicks onto browser windows, facilitating non-invasive collaboration
- TartanHacks 2022 Best Use of Google Cloud Award

BioInf-PHP
- Built a bioinformatics pipeline web application to automate various gene analysis tasks (e.g. MEME analysis, BLASTP analysis, Multiple Sequence Alignment, Phylogenetic Tree Construction)
- Published 1st-Author Research Paper ⧉, presented at CLOUD 2020 International Conference on Cloud Computing