Michael Zhou

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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, Theoretical CS, Mathematical Finance, Machine Learning (Ph.D.), Probability and Computing
- 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 Rust and Java
Tools & Frameworks: PyTorch, Pandas, NumPy, GPT, OAuth, FastAPI, Flask, Docker, AWS, Google Cloud, Git/GitHub
Interests & Hobbies: Tennis, distance running, cooking (Asian cuisines), reading, card games (poker, fish, bridge), behavioral science

EXPERIENCE

Lawrence Livermore National Laboratory   May 2023 – Aug 2023
Research Intern | Applied Machine Learning for Cybersecurity   Livermore, CA
- Global Security Division: Researching applications of machine learning for network-level threat detection and fingerprinting

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
- Developed AI pipelines and prototypes, conducted user studies, and led efforts in business plans and user outreach
- TartanHacks 2023 Grand Prize, and Best Use of Google Cloud Award

Carnegie Mellon University School of Computer Science   Jan 2023 – Mar 2023
Teaching Assistant | 07-180: Concepts in Artificial Intelligence   Pittsburgh, PA
- Designed and tested assignments, held weekly office hours, and taught supplementary recitations for 100+ students
- Authored course notes, held final review 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 an 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