Michael Zhou

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EDUCATION

Carnegie Mellon University, Pittsburgh, PA. May 2025
Bachelor of Science in Mathematical Sciences, Additional Major in Computer Science
GPA: 3.94/4.0

RELEVANT COURSEWORK

Introduction to Computer Systems, Parallel and Sequential Data Structures and Algorithms, Principles of Imperative Computation, Functional Programming, Probability, Matrix Theory, Introduction to Mathematical Finance, Multidimensional Calculus

SKILLS

Software/Computer: Java, C, Python, SML, PyTorch, TensorFlow, LaTeX, Git, NumPy, Jupyter Notebook, Linux, macOS, Windows
Languages: English, Mandarin

EXPERIENCE

United Imaging Intelligence America **Cambridge, MA**
Machine Learning Software Engineer Intern *May - Aug 2022*

- Implemented a full late gadolinium enhancement (LGE) cardiac MRI (CMRI) pipeline including segmentation and analysis modules, as part of an AI software product designed to assist radiologists, targeted for future global release.
- Developed deep neural networks for cardiac MR myocardial segmentation, achieving volumetric dice score of 0.840.
- Acquired working knowledge of various deep learning models/algorithms, LGE CMRI, along with related medical imaging modalities and medical image processing/analysis methods.

Carnegie Autonomous Racing **Pittsburgh, PA**
Path-Planning Software Engineer *Jan 2022 - Present*

- Researching and developing path-planning algorithms, including raceline optimization and GraphSLAM.
- Assisting completion of path-planning deliverable for the purpose of deploying an autonomous EV for competitive autonomous racing such as F1TENTH, Formula Student Driverless.

Crystal Metalworks **Hatfield, PA**
Project Management Intern *Jun - Aug 2021*

- Constructed new company database infrastructure using Airtables, then transferred company data from Procore/Excel/Sheets into Airtables, increasing company efficiency and accelerating workflow.
- Tracked construction project finances from accounting software Spectrum to Sheets for 80+ projects, 2x week.
- Prepared office space for post-COVID changes by redesigning office floor plans with AutoCAD.

PROJECTS

SAT Solver Algorithm [15-150] *October 2022*

- Developed and tested a continuation-passing style (CPS) SAT solving algorithm using the functional programming language Standard ML.
- The algorithm recursively implements unit propagation, a procedure in automated theorem proving, to simplify logical statements represented by boolean clauses in conjunctive normal form (CNF) and determine satisfiability.
- Utilizes continuations to recursively compute the satisfiability of the input formula and efficiently structure control flow.

C0 Virtual Machine (C0VM) [15-122] *April 2022*

- Developed and tested a virtual machine for C0, a safer subset language of C. Modeled after the JVM, this VM operates like a stack.
- The C0VM can handle 40+ instructions, such as saving/loading constants, local variables, calling assertions/errors, handling control flow, native function calls, function calls/returns, and memory allocation/loading.

LEADERSHIP ROLES

CMU Asian Students Association **Pittsburgh, PA**
Events Chair *November 2022 - Present*

- Leading the development/execution of large scale events for CMU ASA, and a main representative on behalf of the students within the organization to the campus community.
- Director and overseer of the Events Committee, a team of 6-8 members for the purpose of organizational and logistical tasks relevant to the execution of large planned events.

HONORS & AWARDS

Goldman Sachs/Carnegie Mellon University Quantathon, Top 5 Finalist Spring 2022
AIME qualifier Spring 2020