

Michael Peng

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Enthusiastic software engineering generalist, reflective instructional aide, and meticulous web developer.

EDUCATION

University of Michigan, College of Engineering

Class of 2024

B.S.E. in Computer Science

Courses Discrete Math, Programming and Data Structures, Data Structures and Algorithms, Foundations of Computer Science, Multivariable Calculus

GPA 4.00/4.00

Awards William J. Branstrom Freshman Prize, University Honors, Dean's List

The only student out of 969 students in EECS 280 (Programming and Data Structures) to earn a perfect score on the final exam in Fall 2021

WORK EXPERIENCE

Computer Science Instructional Aide

2022 – Present

University of Michigan

[Course website](#)

- Hosting a Laboratory class and Office Hours for EECS 280, Programming and Data Structures
- Coaching students one-on-one and answering questions on Piazza to support student success
- Brainstorming improvements to setup tutorials and curriculum by analyzing past Piazza questions

Game Developer

2021 – Present

Pop Elephant

- Developing *SaviorForAll*, a fantasy-inspired career simulation game, for its designer from scratch using GameMaker (Release expected on Steam in 2024)

COVID-19 Research Intern

2020 – 2021

Brandeis University

[Website](#)

- Prepared datasets for a team that predicted COVID-19 case trends for each state in the United States
- Implemented algorithm to estimate mobility between U.S. states using Geopandas and Python
- Crafted the team's [website](#) to visualize predictions stored in [Airtable](#)

Product Development Intern

Summer 2019

Codio, Inc.

[Examples](#)

- Collaborated with a 5-person team using Scrum to author programming assessments for the initial release of Codio's Global Assessments Library
- Invented automated tool to fix assessments for compliance with conventions, boosting product quality

PROJECTS

Professional Relations Management Browser Extension ("Plinq")

2022 – Present

- Collaborating with a 5-person team from [V1 Product Studio](#) to design, build, and market a web browser extension in React (Next.js) that helps people chronicle and maintain their professional relationships
- Reverse-engineered internal LinkedIn APIs and developed an embedded user interface to help users import connections from LinkedIn

Relational Database Manager ("SillyQL")

2022 – 2022

- Planned and developed a relational database manager with syntax resembling SQL using modern C++ and Test-Driven Development
- Profiled, analyzed, and tuned program for optimal performance

Academic Schedule Optimizer ("SchedOpt")

2021 – Present

- Constructed a backtracking algorithm in F# and C++ that finds all feasible schedules given courses to take at the University of Michigan and ranks them according to customizable user preferences
- Building a school-agnostic, public web interface on AWS API Gateway, AWS Lambda, and DynamoDB

COVID-19 Machine Learning Model

[Website](#) 2020 – 2021

- Independently created and tuned a Recurrent Neural Network for COVID-19 transmission prediction in R, combining state-of-the-art mechanistic and statistical techniques from academia
- Developed a web-based [visualization](#) of COVID-19 transmission per variant in the United States

PreMatch.org

[Link](#) 2018 – 2021

- Founded and co-developed a website, Discord chat-bot, and iOS app to help Andover High School students understand and apply their complex schedules on a daily basis
- Website (backend in Python) showed >1,100 students their classmates before each school year started
- iOS app in Swift showed >500 students their classes on any given day, facilitating academic planning

Microprocessor Emulator (“csim6502”)

GitHub 2018 – 2018

- Designed and implemented a complete emulator of the MOS 6502 microprocessor in maintainable, expressive C++ using strict Test-Driven Development within 2 weeks

ACTIVITIES

Project Leader & Education Committee Member

2022 – Present

Michigan Data Science Team

Project Report

- Refining introductory tutorials and checkpoints for new members
- Planning advanced tutorials and talks to educate members on data science
- Led a project that used BigQuery to investigate the reliability of Blue Buses at the University of Michigan

Chief Software Officer & Team Leader

2019 – 2021

Andover Robotics Club

GitHub

- Oversaw software engineering in Java & Kotlin for three *FIRST* Tech Challenge (FTC) robotics teams
- Developed common codebase and documentation site to help club posterity with programming
- Led team to win the Think Award for excellent documentation at the Massachusetts State Championship
- Developed clubwide, web-based Attendance Management System (AMS) using Svelte and Firebase to facilitate attendance planning and contact tracing in response to COVID-19
- Created and marketed web browser extension that helped top FTC teams in Massachusetts record, share, and analyze other teams’ performance for alliance selection during competitions in 2020

TECHNOLOGIES

Languages Python, C++, HTML/CSS, Rust, Java, JavaScript, Swift, R, Kotlin, L^AT_EX

Libraries React (Next.js), Vue, Svelte, Flask, Tailwind, Pandas, Doctest, Google Test, Tidyverse

Platforms Windows, macOS, Linux, iOS, Docker, Google Cloud, Firebase, GitHub, GitLab