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 and Engineering

Courses	Discrete Math, Programming and Intro 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

WORK EXPERIENCE

Computer Science Instructional Aide   2022 – Present

University of Michigan

- Hosting a Laboratory class and Office Hours for EECS 280, Programming and Intro 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

- 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.

- Collaborated with a 5-person team using Scrum to author programming assessments for educators through Codio's Global Assessments Library
- Invented automated tool to fix assessments for compliance with conventions, enhancing product quality

PROJECTS

Plinq   2022 – Present

- Designing, developing, and marketing a web browser extension in React (Next.js) that helps people chronicle and maintain their professional relationships in a team of five members
- Reverse-engineered internal LinkedIn APIs and developed an embedded user interface to help users import connections from LinkedIn

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

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
- Ideating a public web interface and features to maximize shared classes and free time within groups

COVID-19 Machine Learning Model   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 2018 − 2021
- Founded and co-developed a website, Discord 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

csim6502 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

Michigan Learning Community Peer Mentor August 2022 − 2023
Living ArtsEngine
- Will mentor and host events for a diverse cohort of first-year students interested in engineering, arts, music, and architecture in order to foster community
- Will host workshops introducing useful creative tools in software engineering
- Will lead a team of first-year students in a creative collaborative project

Project Leader & Education Committee Member 2022 − Present
Michigan Data Science Team
- 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
- Oversaw software engineering for three *FIRST* Tech Challenge (FTC) robotics teams
- Developed common codebase and documentation site to help club posterity with software engineering
- 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, LaTeX
Libraries	React (Next.js), Vue, Svelte, Flask, Tailwind, Pandas, Doctest, Google Test, Tidyverse
Platforms	Windows, macOS, Linux, iOS, Docker, Google Cloud, Firebase, GitHub, GitLab