

# Michael Chen

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<https://vayfarer.github.io/>

Software engineer coming from a background in civil engineering. I am seeking opportunities in software engineering with a collaborative team environment and avenues to apply and grow my skills.

## EXPERIENCE

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*Software Engineer, True Ad Solutions: July 2024 to Present*

- Independently responsible for developing and deploying full stack application features on AWS platforms, including user account management systems, front end interfaces for database CRUD operations, search result ranking, WYSIWYG editors.
- Reduce features loading time by 95% by implementing image thumbnailing, resource storage, and retrieval on AWS S3.
- Build local development and integration testing frameworks for Python applications and MySQL databases using Docker and test-containers. Incorporate testing frameworks into GHA CI/CD pipelines.
- Ensure application and data security by implementing API authentication/authorization and controlling cryptographic material through AWS Secrets and application IAM roles.
- Review code pull requests with senior software engineer.
- Troubleshoot and provide solutions to web application errors and unplanned downtime.
- Key technologies: Python, JavaScript, MySQL, AWS, Docker, Flask, FastAPI, Jinja, SQLAlchemy, React.js, HTML, CSS.

*Civil Engineer, Federal Highway Administration: October 2021 to April 2025, US Forest Service: July 2012 to October 2021*

- Subject matter expert for geotechnical engineering and highway materials engineering. Worked in interdisciplinary teams to deliver context sensitive engineering solutions to a variety of client agencies for transportation projects with scope up to \$60M.
- Planned and executed fiscal year budgets up to \$600K to support staff and operations within program area. Supervised a team of 7 laboratory technicians and 1 engineer.
- Instructed engineers in geotechnical investigation, quality control and quality assurance, statistical evaluation, pavement design, and highway materials engineering.

## PROJECTS

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*Stock Market Trading using Artificial Intelligence, Oregon State University, CS 467 Capstone, Spring 2024*

- Process and manipulate large quantities of time series stock market data to provide indicators and measures to feed into PyTorch neural network models and time series optimization algorithms.
- Lead communication with project sponsor to identify desired project methods and outcomes. Manage merge conflict resolution. Implement novel strategies to evaluate neural network model performance and generalization.
- Python software libraries: PyTorch, Pymoo, Pandas, Numpy, Yahoo-finance, PyPlot, Multiprocessing

*Robot Design Competition 2012, Northwestern University, Spring 2012*

<https://github.com/lsapoz/esteban>

- Process data from analog and digital input sensors. Develop PID control code for servos and drive motors. Develop autonomous robot algorithm for completing robot design competition objectives. Finished in first place.
- Key technologies: C, PIC32MX microcontroller, mechatronics engineering, CAD software, prototype fabrication.

## EDUCATION

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*Oregon State University, Corvallis, OR*

B.S. Computer Science

June 2024

GPA: 4.00

*Northwestern University, Evanston, IL*

B.S. Civil Engineering, Cum Laude

June 2013

GPA: 3.72

*Relevant Coursework*

Data Structures, Analysis of Algorithms, Web Development, Cloud Application Development, Software Engineering I & II, Computer Networking, Databases, Operating Systems, Open Source, Assembly Language and Machine Architecture, Statistics

## SKILLS AND ADDITIONAL QUALIFICATIONS

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Python, C/C++, JavaScript, MySQL, HTML, CSS, React.js, Object Oriented Programming, API development, Linux, Docker, AWS

Licensed Professional Engineer (Civil Engineering) State of Oregon: PE95506