Drew Liu
LinkedIn | GitHub
University of Michigan - Ann Arbor
Master degree in Computer Science and Engineering

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May 2026, Ann Arbor, MI

SKILLS

Languages/Frameworks: Python, Go, Golang, C++, C#, Java, JavaScript, TypeScript, HTML5, CSS, SQL/NoSQL, React.js, Vue.js, Django, Spring Boot, Flask, Express.js, NodeJS, FastAPI, .NET, Kafka, ELK stacks
Tools/Technologies: Git, Linux/Windows OS, MySQL, Redis, MongoDB, PostgreSQL, System Design, Microservices, Object-Oriented Programming, Agile Development
DevOps/Infrastructure: Docker, Kubernetes, Helm, OpenShift, Terraform, Ansible, CI/CD(Github Actions/Gitlab Pipelines/Jenkins), Cloud Platform (AWS, GCP), Prometheus
Certificates: **AWS Certified Cloud Practitioner**, CompTIA IT Fundamentals (ITF+) Certification

WORK EXPERIENCE

Software Engineer Intern at PointClickCare | Java, Spring Boot, Typescript, React, Kafka May. 2024 - Aug. 2024

- Developed and maintained backend services for Project Nautilus using **Spring Boot**, **Java** and **PostgreSQL**, enhancing Payer, Rates, and Reimbursement Management. Used **Mockito** for unit testing, reducing bug-related downtime by 30%. Built frontend applications with **React**, **TypeScript** and **Material-UI**. Employed **Jest** for frontend testing, increasing coverage by 25% and reducing defects by 20%.
- Utilized **Kafka** and **Azure EventHub** for real-time auditing, distributed transactions and event publishing, supported by **Docker**, **Kubernetes**, and **Azure**, enhancing system scalability and reducing latency by 35%.

Volunteer SDE at Develop for Good | JavaScript, React Native, Express.js, MongoDB May. 2024 - Aug. 2024

- Developed Concordia app for GSHAC using **React Native** for frontend, **Express.js** for backend services, **MongoDB** for database management, **Firebase** for OAuth authentication with Google, Facebook and Apple and deployment, enhancing volunteer coordination, resource management, and communication features.

Software Engineer Intern at U-M ITS | Python, Django, Typescript, VueJS, SQL, Helm May. 2023 - May 2024

- Developed the admin website Michigan Push Admin using **VueJS**, **TypeScript**, and **Django**, successfully deployed on **OpenShift** using **Helm** charts. Saved the team 40% in time managing push notification services.
- Led a cross-functional team in the creation and deployment of **OpenShift** templates with a **GitHub Actions** CI/CD pipeline for automated image rebuilding and redeployment, improving deployment efficiency by 50%.
- Directed **load testing** and **unit testing** for the Michigan Academic Services API utilizing **cProfile** for bottleneck analysis and **asyncio** for optimization, resulting in a 65% reduction(2.3 to 0.8 seconds) in response times.

DevOps Intern at Airwallex | Kubernetes, Terraform, Helm, CI/CD, Prometheus, Grafana Jun. 2021 - Sept. 2021

- Deployed a secure QA **GitLab** instance on **Kubernetes** clusters on **GCP** using **Helm** charts integrated with **Terraform** and set up a CI/CD pipeline, enhancing deployment speed by 55%.
- Enhanced comprehensive website monitoring by deploying the **kube-prometheus-stack** using Helm charts and customizing **Prometheus** operators to collect GitLab metrics, and configuring **Grafana** for **data visualization**. Enhanced **monitoring** capabilities, increasing actionable alerts by 40%.

PROJECTS

Operating System | *C, C++, RISC-V, x86 Assembly, Makefiles, GDB*

- Developed core components of an operating system: Implemented UNIX utilities, **system calls, virtual memory management, trap handling, multithreading, synchronization, file systems, memory mapping, and a basic network stack**, gaining hands-on experience in operating system design and low-level system programming.

AI-Driven Financial Fraud Detection System | *Python, Machine Learning, Deep Learning, NLP*

- Developed an AI-based financial fraud detection system using **Python**, leveraging machine learning models such as **Logistic Regression, SVM, Random Forest, XGBoost**, and deep learning models like **FinBERT**.
- Implemented data preprocessing techniques for **text cleaning, tokenization**, and transforming data into machine-readable formats, ensuring balanced and fair model training.

AI-Enhanced Stock Monitoring System | *Python, TimescaleDB, PostgreSQL, OOP, Machine Learning, Streamlit*

- Developed an AI-enhanced stock monitoring system in **Python**, leveraging **Object-Oriented Design** and **TimescaleDB** to store and analyze millions of stock price data rows, implementing pattern recognition. Utilized **async, aiohttp, and asyncpg** libraries for real-time data fetching and updates within 1 second, and implemented over 20 monitoring strategies across 100+ stocks, ensuring high efficiency and reliability.