

# Xinyu Ma

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## EDUCATION

### University of Michigan, Ann Arbor, MI

Jan. 2021 – Dec. 2022

*Master of Science in Electrical and Computer Engineering*

**GPA: 4.0/4.0**

**Related Courses:** Data Structures & Algorithms, Object Oriented Design, Database Management Systems, Information Retrieval

### Southwest Petroleum University, Chengdu, China

Sep. 2016 – Jun. 2020

*Bachelor of Engineering in Automation*

**GPA: 3.78/4.0**

**Honors & Awards:** Outstanding Graduate Awards, The First-class Outstanding Student Scholarship for 2018-2019 Year

## TECHNICAL SKILLS

**Languages:** Java, Python, Matlab, JavaScript, HTML/CSS

**Database:** MySQL, MongoDB, SQLite, Oracle

**Skills/Tools:** Machine Learning, Deep Learning (Pytorch/Tensorflow), Artificial Intelligence, Web Scraping, Linear Models, Git, Maven, Docker, Heroku, AWS

**Full Stack:** Spring Boot, Flask, Django, Node.js, JQuery, Bootstrap, Typescript, React, Redux, Grafana

## EXPERIENCE

### Machine Learning Engineer Intern

May 2021 – Present

*University of Michigan, Biomedical & Clinical Informatics Lab*

*Ann Arbor, MI*

- Constructed a **Clinical Decision Support System** using hybrid Fuzzy Neural Network to predict Heart Failure based on 5000+ patients' data in REVIVAL dataset
- Programmed whole training-testing framework with different algorithms (**Hill Climbing Algorithm, Simulated Annealing Algorithm, Genetic Algorithm**), **improving F1 scores by 10%**
- Extracted filtered humanly understandable rules and encoding thresholds from trained model, visualized rules on **Grafana** dashboard using **MQTT** and **Graphite**

### Full-Stack Software Engineer Intern

Aug. 2020 – Sep. 2020

*SanMiao Technology Co.,Ltd*

*Shijiazhuang, China*

- Built a full-stack web application with **Spring Boot** for barber-sharing Backstage Content Management System consisting of order, product and position management modules
- Developed **RESTful APIs** based on **Spring, Spring MVC** framework, configured **MyBatis** with DAO interface, Mapper to handle interaction between MySQL and JAVA program and support CRUD functionalities
- Created modules' layout and client side web pages using **LayUI**, JQuery, HTML/CSS, JavaScript and AJAX;
- Reduced history page loading time by 20%** by caching with Redis and optimizing current database schema, **supported 300 employees to manage data from a small and medium-sized enterprise**

## PROJECTS

### Customer Feedback Collection Platform

Aug. 2021 – Sep. 2021

- Developed a full stack web application from scratch using **React, Redux, AJAX** as frontend and MongoDB, **Express, Node.js** as backend for online customer feedback collection service
- Accomplished user authentication flow with Google OAuth using Passport.js that users can sign up, login, logout
- Integrated billing/payment feature using Stripe API for online credit card transaction with email sending feature using SendGrid API for click tracking management, stored account balance and survey response in MongoDB
- Deployed the application to Heroku CLI, and the **peakflow can achieve 1000 requests per second**

### Database Management System Implementation

Feb. 2021 – Apr. 2021

- Designed Oracle SQL database schema utilizing Entity Relationship Diagram and relational model to store data of Facebook-like users; generated external views to display data, facilitating centralized management of users info
- Wrote SQL queries along with **JDBC** to fetch users records and optimized code with creating views instead of joining same table for multiple times, using Selection before Projection and replace set operations with nested queries, **enhancing execution efficiency by 75%**
- Created collection in MongoDB and obtained users data by complex queries, analyzed SQL and NoSQL databases
- Summarized 6 join algorithms and implemented Grace Hash Join Algorithm for partition and probe phases in C++