

# YANGFEI DAI

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## EDUCATION

### University of Illinois at Urbana-Champaign

Master of Science in Mechanical Engineering

GPA: 4.0/4.0

*Relative Coursework: The Art of Web Programming, Database Systems, Communication Network, Machine Learning, Computer Vision*

*TA Experience: Lead weekly discussions, host office hours, and perform grading for ME270*

Aug 2022 - Expected Dec 2024

Champaign, IL

### Zhejiang University

Bachelor of Engineering in Mechanical Engineering

GPA: 3.92/4.0 (Top 3%)

*Relevant Coursework: C Programming, Artificial Intelligence, Probability & Mathematical Statistics*

Aug 2019 - May 2023

Hangzhou, China

## SKILLS

**Programming Language:** Java 8, JavaScript, Python, SQL, NoSQL, C++

**Technologies:** Spring Boot, Spring Security, Maven, Node.js, Git, Docker, MongoDB

**Additional:** AWS, Netflix Eureka, Netflix Feign, React, HTML 5, CSS, npm, Pytorch, Express, ROS

## PROJECTS

### Timesheet Management Application (Backend)

Oct 2023 - Jan 2024

- Developed a responsive backend for Timesheet Management App using **Spring Boot** with **microservices**, and optimized **RESTful API** calls through **@Async** and **Executor Service**, achieving efficient multi-threading API calls.
- Designed and built solid microservices backend with **Composite Server** and **Core Server**, configured via **Gateway(load balancer)**, and integrated with **Netflix Eureka** and **Feign** for service registry and streamlined communication.
- Implemented a secure Authentication and Authorization system with **Single Sign-On (SSO)**, fortified by **Spring Security** and **JWT**.
- Employed **MongoDB** to manage profiles and timesheets, while utilizing **AWS S3** for cloud storage and relational database(**MySQL**) for credential storage.
- Constructed the **React** front end, implementing state management through **Reducers** and **Redux** to ensure a seamless user experience.

### Interactive Trip Planning Web Application (Full-Stack)

Jul 2023 – Aug 2023

- Harnessed **Node.js & Express** for server-side functionalities, employed **React** for frontend development, and utilized **MySQL** for relational database managements
- Designed **UML models** and translated them into relational databases while minimizing redundancies following the principles of the Third Normal Form (3NF)
- Achieved a significant 99.45% reduction in data retrieval costs through the implementation of composite indexing on relations containing 20,000+ records
- Maintained the database and enhanced application functionality by integrating stored procedures and triggers within the database

## PROFESSIONAL EXPERIENCE

### Research Assistant (Machine Learning)

Sep 2022 - Aug 2023

*Coordinated Science Laboratory, UIUC & FIT-Foxconn Interconnect Technology, Ltd*

Champaign, IL

- Developed a bespoke data labeling tool in **Python** for annotating instance masks on real images. Improved the GUI speed from 3fps to 25fps by refining the rendering logic
- Deployed and trained two deep learning models(Mask R-CNN and PvNet) using a dataset comprising over 20,000 augmented synthetic and real images. Achieved sub-centimeter precision in pose estimation for robotic assembly
- Proficiently utilized **Docker** for streamlined code delivery and **GIT** for version control in regular project workflows

### Robotics Engineer Intern

May 2022 - Jul 2022

*Hangzhou Shenhao Technology Co., Ltd.*

Hangzhou, China

- Led a team of two in the design and development of a de-icing robot prototype for transmission lines
- Programmed fundamental robot functionalities, including robot movements and vibration control, using **C language** on an STM32-based embedded system