Yichen LI

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TECHNICAL SKILLS

- **Programming Language**: Java, Python, C#, JavaScript/TypeScript, SQL
- **Frameworks & Libraries**: Node.js, Spring Boot/MVC, React, Express.js, Three.js, ar.js
- **Database**: MySQL, MongoDB, Cloud Firestore
- **Dev Tools & Platforms**: Git, Docker, Azure, Firebase, AWS, Postman

EDUCATIONAL BACKGROUND

Worcester Polytechnic Institute (WPI), Worcester, MA   Expected 12/2025
PhD student in Computer Software and Media Application, GPA: 3.91/4.00
- Research on Human-computer Interaction, multi-user collaboration in AR/MR, multimodal interface

Worcester Polytechnic Institute (WPI), Worcester, MA   09/2020
Master of Science in Interactive Media and Game Development, GPA: 3.68/4.00
- Relative courses: Design of Software Systems, Data Visualization, AI, Deep Learning, Computer Vision

Shandong University, Jinan, Shandong, China   06/2018
Bachelor of Science in Software Engineer
- Relative courses: Data structure, Operating System, Computer Network, Computer graphics

WORK EXPERIENCE

WPI Intentional Design Studio ([IDeaS](#)) | *Lead Developer*   10/2020 – 08/2024
- Collaborated with stakeholders, product manager, UI designer and led other developers to outline execution plans and participated in creating and prioritizing tasks with Kanban Board
- Developed a cross-platform mobile app for Business School using **React Native** with data stored and accessed through **Firestore Database**, facilitating on-campus food delivery for over 100 students during the pandemic.
- Built an AI Art mentor web app using **OpenAI** and **DALL·E** to provide personalized skill improvement plans via quizzes, incorporating **Whisper** for audio input, directly benefiting 200 students in the Architecture and Art departments.
- Collaborated with off-campus organizations including Massdigi, Worcester Art Museum (WAM), Petricore, and Delsys to design and develop standalone and web-based applications for business use.
- Led technical training for a team of 50, conducting weekly knowledge sessions and workshops on integrating emerging technologies like XR and Generative AI into mobile and web applications
- Used **Docker** to manage development environments, streamlining local development, staging, and production setups.

PROJECTS

Protein Structure Visualization System Based on WebXR   01/2024 - 08/2024
- Collaborated with Chemistry department professors to design and create an AR system for undergrads to better understand protein structure. Addressed the effectiveness of the application by testing with 20 participants in Chemistry department.
- Developed using **Node.js** and deployed to WPI **Ubuntu Server** with the integration of **Azure Entra ID SSO**.
- Used **ar.js** and **three.js** to visualize the protein structure in 36 different color and styles variations within AR.
- Implemented remote collaboration via **WebRTC** with **PeerJS**, enabling synchronous multi-user viewing and comparison of structures, supported by a tree topology for one-way video streaming in large lectures.

GoATeach: **STEM Center Student Management System**   06/2023 - 12/2023
- Developed a **distributed** web application for WPI STEM Center's "Teacher Prep Program" to manage student data and track milestone progress, actively used by 2 managers and 50 students.
- Designed a microservices architecture using Java and **Spring Boot**, with dedicated services for student data storage and milestone tracking, ensuring scalability and efficient resource management.
- Built **RESTful APIs** for seamless communication between the front-end and SQL database.
- Implemented role-based access control using **Azure AD**, ensuring secure access for both managers and students.

coARch: **Multi-user Architecture Design System in HoloLens2**   06/2021 - 12/2021
- Developed a multi-user AR system on HoloLens2 for collaborative building using Lego-like bricks, enhancing learning in architecture design. Validated the system through AB testing, t-test, and Wilcoxon signed-rank test with 30 students.
- Implemented co-located synchronous collaboration features with **PUN2 service** and **Microsoft Azure Spatial Anchor**.
- Published and presented research paper *Promoting collaborative learning in architectural engineering design through multi-user augmented reality* at 2022 ASEE Annual Conference & Exposition, Minneapolis, MN: https://peer.asee.org/41688