ZILIN LIU

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SKILLS

- **Proficient:** Java, C#
- **Familiar:** Python, Web Development (JavaScript), MySQL, C++
- **Platforms/Tools:** Spring (Spring Boot), React.js, Unity Engine; AWS, MySQL, and relevant tools (Git, Postman, Docker); Microsoft office tools (Excel, Word, PowerPoint)
- **Abilities**: Strong teamwork abilities and adaptability in collaborative environments, Bilingual in **Mandarin** with professional communication skills.
- **Interests: Software** Development; Video Game Developer
- **Hobbies:** DND Games, Video Games (RPG or Coop), food.

EDUCATION

UC San Diego
Bachelor of Science, Computer Engineering **09/2022– Current (06/2026)**

- 3.9/4 GPA, CS: 3.98/4
- Provost Honors in all quarters
- Caledonian honors

PROJECTS

Web Project, U.S. **03/2023 – 08/2023**
Video Recommendation Website, Full Stack

- **Frontend:**
  - Developed a Twitch-like video browsing and recommendation platform using **React** with **Ant Design** for UI, adhering to **REST API** principles.
  - Implemented user authentication, video search, and personalized recommendation features using **REST API** principles
  - Implemented integration testing with **Postman** and used **JavaFaker** for data mocking
  - Designed a **thin client architecture** to maximize accessibility and user satisfaction.
- **Backend:**
  - Developed backend using **Spring Boot** and **Gradle**, using **MySQL** in a **Docker** container for data storage.
  - Implemented a session-based authentication with **Spring Security** and user password encoding (bcrypt), along with caching via **Spring Data Caching** and **Caffeine**.
  - Utilized **JDBC** in Spring Boot for data communication and repository management.
  - Deployed the application on **AWS** (with App Runner)

- **Tools/Platforms:** Java, JavaScript/React, Spring Boot, MySQL/AWS

Unity Project, U.S. **01/2023-04/2023**
Talis Stand, https://kongcheng.itch.io/talis-stand

- Developed the 2D tower defense game Talis Stand
- Designed and implemented shaders and use Particle system to support various hit effect
- Presented the game to the university game development club and win an award.
- Toolset used: C#, unity engine, C++

Course Project, UC San Diego, U.S. **12/2022**
Sound Synthesizer project, https://kiminus.github.io/ECE45_Synthesizer/

- Create sound synthesizer project based on react
- Allow users to simulate waveform with envelope and filters.
- **Tools/Platforms:** React, Web development (HTML, CSS, JavaScript)

EXPERIENCE

Shulang Technology, aka Digital Wave, Zhejiang, China **06/2022-09/2022**
Intern Unity Developer/Tester

- Developed and implemented user-friendly UI for an oil transfer VR training project using **Unity**, enhancing usability and performance.
- Utilized **HPTK** for improved user interaction and integrated **XR Interaction Toolkit** to optimize VR experience with teleportation, reducing motion sickness and enhancing training realism.
- Leveraged Oculus XR Hand and **HurricaneVR** packages to simulate precise hand and physical interactions in a VR environment.
- Improved VR UI navigation by implementing a controller-based system, addressing user interaction challenges and significantly enhancing comfort and usability.
- Optimized rendering and performance using foveated rendering techniques.
- Collaborated with the team to write automated testing programs and prepare documentation for competitive market bidding.

New horizon AI, remote **09/2024-current**
Quality assurance

- create automated E2E tests using Cypress and Cucumber

Web Developer

- Designed and implemented a **streaming ETL pipeline** in Node.js to efficiently ingest, transform, and distribute real-time data streams.

Courses

CSE 29: Systems Programming and Software Tools

- systems programming using the C programming language and software tools (e.g., gdb, valgrind, make) in the UNIX environment

CSE 30: Computer Organization and Systems Programming

- Assembly language (C, arm assembly)
- Learned and designed basic components of computer processor, Studied fundamental computer hardware

CSE 100: Advanced Data Structures

- C and C++ programming, learned and analyzed implementations of trees, graphs, and hash tables

CSE 110: Software Engineering

- Developed project management software collaboratively in a team using Agile methodologies, integrating automated testing, CI/CD pipelines, test coverage analysis, and GitHub Pages for static web deployments.

CSE 158: **AI and recommender design**

- Created and designed AI model to predict item rating and offer recommendations.

ECE 65: Components and Circuits Laboratory

- Introduction to linear and nonlinear components and circuits, including diodes, MOSFET, BJT, and other transistors.

ECE 101. Linear Systems Fundamentals

- Signal and system analysis in continuous and discrete time using Fourier/Laplace series/transformation.