Celia Z

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EDUCATION

University of Western Australia Expected May 2025

Master of Information Technology (WAM: 73 / 100) *Perth, WA*

- **Relevant Course:** Web Development, Database, System Programming, Internet of Things, Data Analysis.

Northeastern University Sep 2017 – June 2021

Bachelor of Biomedical Engineering (WAM: 82 / 100) *Shenyang, China*

- **Relevant Course:** Data Structures and Algorithms, Signals Processing, Circuit Principle, Computer Graphics.

EXPERIENCE

Coders for Causes Dec 2023 – Feb hen2024

Volunteer Web Developer *Perth, WA*

- Developed a responsive "Basic Information" page with **Next.js**, **TailwindCSS**, and **TypeScript**, aligning with **Figma** designs. Enhanced user engagement through dynamic UI/UX.
- Implemented the donation page and backend payment processing using **REST APIs** and **Next.js** with **TypeScript**, streamlining donations and increasing transaction efficiency. Integrated comprehensive testing with **Mocha** and **Chai** to ensure reliability.
- Established a headless **WordPress CMS** for content management, simplifying site updates and reducing deployment times by 50% with **Docker**. Enhanced code quality and maintainability using **ESLint** and **Prettier**.

Cardiovascular Hospital May 2021 – Aug 2022

Software Engineer *Beijing, China*

- Engineered a sophisticated machine learning pipeline with **Python**, utilizing **pandas** for data manipulation and **scikit-learn** for model development, ensuring high-quality datasets for predictive analytics.
- Automated testing and deployment processes through **CI/CD** practices using **Jenkins**, streamlining the delivery and iteration of **.NET** services and machine learning models.
- Developed a robust **.NET-based backend** to interact with **SQL Server** databases, fetching patient information and integrating AI-driven risk score calculations to enhance backend functionality.
- Crafted a user-friendly interface in **React**, embedding risk score insights into the hospital's Electronic Medical Records (EMR) system, facilitating intuitive access and interpretation by healthcare professionals.

PROJECTS

Drinking Water Reminder Bot (Full-stack & IoT Project)

- Developed a **Raspberry Pi**-based hydration tracker with **Python** and ultrasonic sensors, advancing hydration habits through smart data capture.
- Built the backend on **AWS cloud storage** and a **SQL database** for efficient data handling and storage, ensuring accurate intake monitoring.
- Launched a web dashboard with **HTML**, **CSS**, **JavaScript**, and **React**, offering a user-friendly interface for real-time water consumption insights.

YouTube Incoming Database Analysis Project

- Executed advanced data visualization with **R's ggplot**, producing diverse charts (histograms, maps, heatmaps, bar charts) to reveal pivotal YouTube data insights.
- Led thorough data cleansing, distinguishing between systematic and random omissions, and implemented strategic corrections to ensure data accuracy.
- Applied decision trees and linear models for data analysis, using **ROI** as a metric, identifying strong links between upload frequency and revenue. Achieved the **highest score among all group projects**, demonstrating exceptional analytical prowess and project impact.

DBANK DeFi DApp Project (Decentralized Finance)

- Developed **DBANK**, a Decentralized Finance (DeFi) application inspired by Compound. Focused on implementing core functionalities using the **Motoko** language, targeting the Internet Computer Protocol (ICP) blockchain.
- Engineered a robust backend with **Motoko**, utilizing **orthogonal persistence**, **query vs. update methods**, and compound interest calculations to manage digital assets securely and efficiently.

- Designed and connected a dynamic frontend using **HTML**, **CSS**, and **JavaScript**, integrating **React** for a seamless user experience. Deployed the full-stack DApp on the ICP network, demonstrating advanced skills in blockchain application development and deployment.

CPU Scheduler Simulation Project

- Developed **'myscheduler'**, a simulation tool in **C11** for emulating **pre-emptive process scheduling** on a single-CPU, multi-device system, enhancing comprehension of operating system process management and scheduling algorithms.

Directory Synchronization Utility

- Created **'mysync'**, a **C11-based command-line utility** for directory synchronization across devices, leveraging **POSIX APIs** and build automation to ensure file consistency and streamline workflow across multiple computing environments.

2048 Game

- Designed and developed a Java-based 2048 game utilizing advanced **Object-Oriented Programming (OOP)** principles for scalable architecture and GUI design, with **JUnit** for testing.

TECHNICAL SKILLS

Languages: Python, JavaScript, SQL, C, HTML, CSS, Scheme, Java, TypeScript, R, C#
Frameworks/Libraries: .NET, Flask, Next.js, React, Tailwind CSS, Django, jQuery, Bootstrap, Node.js, Express.js, Redux, MongoDB, GraphQL, Web3, PostgreSQL, REST APIs, scikit-learn, TensorFlow, PyTorch, ggplot2, shiny, pandas
Tools: Git, AWS, Raspberry Pi, Docker, Linux, Unix Shell Scripting, Vim, LaTeX, VS Code, GitHub, Heroku, Security and Cryptography tools, Data Wrangling tools, Debugging and Profiling tools, WordPress