Lily Wu

- Software Engineer

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Personal Summary

I've always been interested in understanding how things work. A detail-oriented Full Stack Software Engineer specialising in building scalable, performant web applications using .NET/C# and React/TypeScript. Highly proficient in architecting robust back-end services with Entity Framework Core and integrating modern front-end libraries for seamless user experiences. Experienced in containerising applications with Docker, managing event-driven database architectures, and deploying cloud-ready solutions. Adept at translating complex business requirements into practical, optimised software delivery. Passionate about leveraging recent AI technologies to enhance application features and streamline development workflows.

Key Skills

- C# / .NET
- ASP.NET Core
- Entity Framework Core
- SQL Server / T-SQL
- Cypress / Jasmine (E2E and Unit Testing)
- Azure / Azure DevOps
- CI / CD
- Docker
- Microservices
- RabbitMQ / Azure Service Bus
- React / Typescript / JavaScript
- HTML / CSS / SCSS
- Tailwind CSS / Redux
- Solid / Design Patterns
- AI API Integration / LangChain
- Prompt Engineering
- Agile / Scrum

Experience Highlights

Software Engineer **May 2025 - Present**
SOCOTEC, UK, Manchester

Project: Internal Field Service & Monitoring Platform - A system to manage multi-site route planning, compliance sampling data, and real-time technician tracking.

- Engineered a robust backend architecture using ASP.NET Core Web API and Entity Framework Core, optimising spatial data queries to streamline multi-site route planning algorithms.
- Developed a responsive, offline-capable Progressive Web App (PWA) using React and TypeScript, enabling field technicians to log time-stamped site diaries and chain-of-custody data seamlessly.
- Integrated AI-driven anomaly detection utilising the Amazon Bedrock to automatically flag irregular environmental monitoring data and trigger incident escalation workflows.
- Integrated comprehensive observability using OpenTelemetry and DataDog for real-time monitoring, distributed tracing, and proactive issue resolution across the platform.
- Implemented secure authentication and authorisation systems utilising Azure Active Directory (Entra ID) and Role-Based Access Control (RBAC) to ensure strict data compliance.

Full Stack Software Engineer **November 2022 – May 2025**
Innoware, UK, Manchester (Hybrid)

Project: Enterprise Resource Planning (ERP) & Client Management Solutions - comprehensive business logic handling, cross-departmental coordination workflows, and user dashboards.

- Played a key role in migrating legacy monolithic architecture to scalable, event-driven microservices utilizing .NET Core, Docker, and RabbitMQ / Azure Service Bus for asynchronous communication.
- Designed and implemented dynamic user interfaces using React, Redux for state management, and Tailwind CSS, increasing overall user workflow efficiency and satisfaction by 30%.
- Built and maintained RESTful services and robust data access layers with C#, LINQ, and Entity Framework, drastically optimizing database performance and query execution times.

- Configured CI/CD pipelines in Azure DevOps and implemented robust End-to-End (E2E) testing utilizing Cypress, ensuring zero-regression deployments and eliminating service bottlenecks.
- Utilised Generics to create object collections and extensively applied them to ensure type safety, thereby reducing runtime errors and improving codebase stability.

Education

MSc Environmental Impact Assessment and Management, The University of Manchester, UK

Key Focus Areas: Applied Data Science | Spatial Data Modeling | Systems Analysis | Process Automation

Key Learning Outcomes: Transitioned into technical development by learning core programming fundamentals (C#, SQL) to process, clean, and analyse complex ecological datasets. Applied logical reasoning and scripting to automate data workflows and map spatial constraints using GIS systems. Gained robust experience in translating strict regulatory requirements into precise, audit-ready relational data models—skills that directly formed the foundation for my transition into backend architecture and database design.

BBA Business Administration, Soochow University, Taiwan | GPA: 3.9 out of 4

Key Focus Areas: Strategic Technology Integration | Data Analytics | Operations Management | Enterprise Architecture

Key Learning Outcomes: Developed a strong foundation in understanding complex enterprise requirements, business logic, and strategic technology adoption. Initiated my software engineering journey by undertaking elective coursework in web development (HTML/CSS/JavaScript) and applied data analytics. Cultivated cross-functional planning, requirement gathering, and communication skills that are essential for bridging the gap between business stakeholders and agile software engineering teams.