

# ZIXI (SAM) TANG

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## Technical Skills

- **Languages:** C#, C++, Java, Python, CSS, HTML, JavaScript, SQL, C
  - **Technologies:** React.js, SQL Server, .Net, Azure, Entity Framework Core, Bootstrap
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## Experience

### Full-stack Developer | ZOMP

Apr. 2023 – Aug. 2023

- Contributed to an innovative software project, leveraging **.NET 8 (C#)**, **Entity Framework Core**, and **SQL Server** for development
- Utilized **XAML (WPF)** to display front-end functionality, showcasing a dropdown list of dates extracted from an Excel sheet through **scraping** techniques
- Applied the **Code-First approach** using **Entity Framework Core** to automate the database (**SQL Server**) entry generation
- Implemented **RESTful API** architecture to seamlessly transition from a localized application to a **scalable cloud-based server** environment
- Established a centralized **cloud-based service** hosted with **Azure SQL Database**, **Azure App Service**, and **Azure Cloud File Server**
- Thoroughly **tested** APIs utilizing **Postman**, ensuring comprehensive coverage and reliability in functionality

### Front-End Website Developer | FOCUS Youth

Apr. 2021 – Dec. 2021

- Successfully met deadlines by developing an interactive and captivating website using **HTML**, **CSS**, and **JavaScript**, ensuring timely delivery without compromising quality
  - Collaborated within a **dynamic team environment**, prioritizing agility and teamwork to consistently meet and exceed customer satisfaction
  - Utilized the **Bootstrap** framework to create responsive and aesthetically pleasing web designs
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## Projects

### Sudoku Solver | React.js, CSS | [Github](#)

- Employed the **React** framework to develop a web application providing Sudoku solving services
- Utilized **React hooks** extensively to streamline state management and component logic, enhancing code modularity and scalability
- Deployed **bit masking** algorithms to significantly **optimize efficiency**, reducing the time complexity of validating node inputs from **O(n)** to **O(1)** for improved computational performance

### Sudoku Solver Backend | C#, .Net 7, SQL, SQL Server | [Github](#)

- Developed a **.NET 7 (C#)** web application to craft custom **APIs**, facilitating communication with **backend** logic
- Established a local SQL database using **SQL Server**, importing and organizing **9 million** Sudoku puzzles from a **CSV** file

### Raiinet Game (CS 246 Final Project) | C++

- Employed the **observer pattern** to develop responsive UI components, enabling seamless updates and interactions in real-time for an enriched user experience
- Implemented the **RAII (Resource Acquisition Is Initialization) idiom** using **unique pointers** and **shared pointers**, ensuring a **memory leak-free application**
- Implemented the **factory pattern** to facilitate various game modes, spanning from 1-vs-1 matches to 4-player free-for-all matches, each featuring distinct game boards and abilities

### Personal Website | React.js, CSS | [Github](#)

- Employed **React.js** to develop reusable web elements, significantly enhancing the scalability of the website by promoting modular and efficient component architecture
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## Education

### University of Waterloo

Sep. 2022 – Apr. 2027 (Expected)

Candidate for the Bachelor of Computer Science

Waterloo, Ontario

- Relevant courses: Object-Oriented Software Development, Designing Functional Programs, Elementary Algorithm Design & Data Abstraction
- GPA | **4.0**