Yong **Zhi Yuan**

Software Engineer - Backend · Clean & Secure Code · .NET 5 · ASP.NET Core · Azure

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Summary

Backend Developer with industry experience building web applications using ASP.NET Core and writing Clean, Maintainable & Secure Code. Also experienced in Azure. Super nerd who loves Vim and 40% keyboards.

One of my recent highlights include publishing a technical guide titled Async / Await: From Zero to Hero, receiving over 31k post views and over 400 reactions to date.

Work Experience

ST Engineering
Singapore

Software Engineer
Dec. 2018 - July. 2020

- Designed the codebase for a greenfield project based on Vertical Slice Architecture and developed new product features, applying knowledge of ASP.NET Core 2.1, EF Core 2.1, Mediatr, SignalR and SQL.
- Identified and implemented Concurrency Control using both Pessimistic & Optimistic Locks, and Application Security measures such as authentication, authorisation and protection against CSRF and XSS attacks.
- Provided technical guidance for a team of 4 developers by performing code reviews and suggested improvements and best practices to follow, and guided 2 junior developers on using Design Patterns such as MVVM for a C# desktop application and Algorithmic Thinking.
- Simplified inherited legacy Java code substantially, resulting in a net decrease of 4.7kLoC, while fixing bugs and implementing multiple new features.
- Eliminated manual execution of performance tests for a Java desktop application by writing an automated test script in Python, saving 45 minutes per test execution.
- Eliminated the need for a team of 20 programmers to perform repetitive chores such as manual cleaning of multiple cache folders (~10 times a day) by initiating and writing an automated script in PowerShell.

Housing & Development Board (HDB)
Singapore

Software Engineer Intern
May. 2018 - Aug. 2018

- Redesigned the key workflow (performed 60 - 80 times per day per inspector) of the existing mobile application used by inspectors to perform site inspection, thereby reducing the number of steps required to perform this workflow from 8 to 3.
- Redesigned 2 other workflows, thereby reducing the number of keystrokes required to perform them from 8 to 2 and 7 to 2.
- Automated the monthly generation of inspection schedule, reducing the amount of time taken to generate the schedule from 1 day to 15 minutes.
- Gathered User Requirements from scratch and continually verified my prototype with users. This helped me to achieve the above, which will eventually be fully developed by HDB's IT Department.

National University of Singapore - Open Source Software (NUS - OSS)
Singapore

Software Engineer Intern
May. 2017 - Aug. 2017

- Made improvements to a Java desktop application used by National University of Singapore to teach Software Engineering to students by providing a model example for students to follow. As a result, this project demands high standards of code quality, and working on this project taught me how to write quality code, and I became familiar with Software Engineering patterns, Unit Testing, CI, CD and Source Control.
- Mentored a student under the Google Summer of Code program and guided new contributors by discussing with them on how to improve on the existing code architecture and reviewing their code.
- Wrote missing unit, integration and system tests, increasing test coverage from 90% to 92%.

NUS
Singapore

Tutor - Programming Methodology
Aug. 2016 - Nov. 2016

- Led a group of 12 students in discussions to familiarize with fundamental concepts of problem solving by computing and programming using C language.
- Achieved an Overall Effectiveness Score of 4.40, which is 0.23 higher than the faculty average in School of Computing.

Projects

Enhancing Data Entry & Data Query
Singapore

A Social Service Organisation
Jan. 2020 - Present

- Created a Progressive Web Application from scratch, where I independently learnt and applied knowledge of Azure Static Web App, Azure Cosmos DB, .NET 5, EF Core 3.1, Blazor Web Assembly w/ Syncfusion, OData and Fluent Validation.

Integrated Solution for Contactless Check-In/Out *Singapore*

Open Innovation Platform *Jul. 2020 - Sep. 2020*

- Open Innovation Platform is a virtual platform managed by IMDA that connects and matches challenges of Problem Owners to a pool of Problem Solvers.
- Led a team of 2 Software Engineers to propose a solution for a sector-wide challenge.

Train to Changi *Singapore*

NUS *Mar. 2017 - May. 2017*

- Developed an interactive, algorithmic puzzle game on iPad in a team of 4.
- Designed and wrote code for the front-end components such as game logic and model, according to the Model-View-Controller architecture.

Wut 2 Do? *Singapore*

NUS *May. 2016 - Aug. 2016*

- Developed an Android mobile application with a partner, which help users to locate entertainment activities near them.
- Used Google API and self-learnt programming languages (PHP, SQL).

Education

National University of Singapore (NUS) *Singapore*

Bachelor of Computing (Honours) in Computer Science

Focus Areas: Software Engineering, Computer Security *Aug. 2015 - Dec. 2018*

- CAP: 4.45 / 5
- Achieved A+ grade for the following modules: Data Structures & Algorithms, Design & Analysis of Algorithms, Software Engineering, Thematic Systems Project

Cocurricular Activity

Exercism

Committer *Jan. 2018*

- Exercism aims to help users improve their programming skills in many different languages through writing code and submitting it to Exercism for feedback.
- Suggested improvements for existing suite of test cases and subsequently updated them. Users attempting these exercises now have a cleaner suite of test cases to refer to.
- Implemented the model answer and the tests for an algorithmic exercise. Users can now attempt this new exercise.

Microsoft Azurenaut Hackathon *Singapore*

Participant *Jan. 2017*

- Created a chatbot in a team of 3 that provides information about NUS, such as the estimated arrival times for the next bus and the availability of car park lots. This project aims to integrate existing mobile applications such as NUS Carparks and NUS NextBus into a single application.

Edusave Awards for Achievement, Good Leadership and Service (EAGLES) *Singapore*

Temasek Junior College (TJC) *2012*

- National Inter-school Wushu Championships 3rd and 4th position
- Performer in National Day Parade
- Class Chairperson: 2011 - 2012

Other Information

Technical Talks	Gave technical talks on Garbage Collection & Safeguarding your code from Memory Leaks as part of coursework.
Technical Writings	Improved clarity of existing material and added new sub-topics on Java Reflections & Introduction to Swift as part of coursework.
Hobbies	Playing video games, reading non-fiction books.