

# Yong Zhi Yuan

SOFTWARE ENGINEER · BACKEND · CLEAN & SECURE CODE · .NET 5 · 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.

## 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.
- Enhanced existing features and suggested new features, thereby improving the productivity and quality of the inspectors' work.
- Redesigned the User Interface to be compatible with the improvements made above.
- 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 develop relevant solutions (as seen above) which will eventually be fully developed by HDB's IT Department and deployed for the inspectors to use.

### National University of Singapore - Open Source Software (NUS - OSS) (10k LoC, 1k commits)

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 & 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

Aug. 2015 - Dec. 2018

FOCUS AREAS: SOFTWARE ENGINEERING, COMPUTER SECURITY

- 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.