Yong **Zhi Yuan**

ASP.NET Core 7 · Blazor · Azure · OAuth 2.0 · Clean & Secure Code ·

(+65) 91292616 | zhiyuan_1994@yahoo.com.sg | Zhiyuan-Amos | zhi-yuan-yong

Summary

- Backend Developer with industry experience building web applications using ASP.NET Core and writing Clean, Maintainable & Secure Code.
- Creating my side project using .NET 7, Blazor & Azure.
- As part of my investigation into OAuth 2.0, identified improvements to OWASP documentation and submitted a PR.
- Writing tech articles on my blog.
- Published a technical guide titled Async / Await: From Zero to Hero, receiving over 33k post views and over 430 reactions to date.

Work Experience

Illumina

Singapore

Software Engineer 2

Apr. 2022 - Present

- Developed new product features in a microservice architecture and actively refactored code, applying knowledge of ASP.NET 6 and EF Core 6.
- Investigated multiple security violations of OAuth 2.0 Authorization Flows and misuse of Id Token, Access Token & Refresh Token in a microservice architecture. Collaborated with teammates to deep-dive and propose mitigations and changes required in the architecture and other services. Also identified several improvements made possible after the above rectifications have been made. Presented to multiple stakeholders including a Principal Engineer & Associate Director. Details of one of the mitigations can be found on my blog post.
- Re-evaluated use of Keycloak as the Authorization Server and compared with the alternative of OpenIddict & ASP.NET Core Identity. Presented to multiple stakeholders including Staff+ Engineers involved in choosing Keycloak, and proposed the scope of work and timeline required for migration.
- Revamped the format for interviewing candidates to better assess their capabilities and interviewed interns & candidates for full-time positions. During post-mortem, the interviewers involved agreed that the new format better identifies false positives.
- Mentored junior engineers by conducting code reviews and pairing with them for multiple tasks. Also inspired them to do better work, sometimes through hard conversations such as performance and behaviour related conversations.
- Wrote unit tests using xUnit & Moq. Also, deep-dived into testing strategies and consolidated information and shared with the team, which can be found on my blog post.
- Improved tooling & development process. For example, piloted Docusaurus to make documentation more delightful to read compared to Confluence, piloted Vertical-Slice Architecture, reversed the decision to hand-write the OpenAPI specification to generate the stub code.

Illumina

Singapore

Software Engineer 1

Feb. 2021 - Apr. 2022

- Implemented new features, upgraded dependencies and fixed bugs for a brownfield project using AngularJS 1.3, ASP.NET 4.6.1, RabbitMQ, Quartz.NET, ServiceStack, NHibernate, PostgreSQL, PowerShell and WiX Toolset, with Continuous Integration using TeamCity and Artifactory.

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 a PowerShell script.

Housing & Development Board (HDB)

Singapore

Software Engineer Intern

May. 2018 - Aug. 2018

- Gathered User Requirements from scratch and redesigned the key workflow (performed 60 - 80 times per day per inspector) of the existing mobile application, reducing the number of steps required from 8 to 3.
- Automated the monthly generation of inspection schedule, reducing time taken to generate the schedule from 1 day to 15 minutes.

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 students on Software Engineering by providing a model example of a high quality codebase for students to follow.
- 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

Couple

Singapore

Self-Initiated Project

Nov. 2020 - Present

- Created a Progressive Web Application using Azure Static Web App, Azure Functions, Azure Cosmos DB, Blazor, .NET 6, EF Core 3.1, IndexedDB, Fluent Validation.

Enhancing Data Entry & Data Query

Singapore

A Social Service Organisation

Jan. 2020 - Oct. 2020

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

Integrated Solution for Contactless Check-In/Out

Singapore

Open Innovation Platform

Jul. 2020 - Sep. 2020

- Led a team of 2 Software Engineers to gather User Requirements, design UI and explore technologies such as Progressive Web Application, Optical Character Recognition and Facial Recognition.

Information Security Capstone Project

Singapore

NUS

Aug. 2018 - Nov. 2018

- Analyzed security requirements, designed and implemented a secure web application using Java, Spring, Hibernate & MySQL.

Software Engineering on Modern Application Platforms

Singapore

NUS

Mar. 2017 - May. 2017

- Developed an iOS game using Swift and applying knowledge of MVC architecture.

Independent Software Development Project

Singapore

NUS

May. 2016 - Aug. 2016

- Developed an Android mobile application using Java, PHP, SQL and Google Maps API.

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