

WIJAYA ADHISURYA

AGILE SOFTWARE ENGINEER

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Profile

An agile-minded software craftsman driven to deliver simple, robust, and maintainable software rapidly. Proven ability to simplify complexity and enhance codebase clarity. Open-minded and unbiased, excelling in face-to-face brainstorming, mentoring, and code reviews. Enjoys hands-on problem-solving. Excited about programming languages, software architecture, agile methodologies, and Test-Driven Development (TDD).

Skills

TDD: Classicist TDD with IO and UI isolation to achieve high quality code with non-fragile tests.

Go: Server programming using PostgreSQL, MySQL, Kafka and ElasticSearch.

C++: Resource-aware C++17 focusing on C++ memory model, RAII and type safety.

C#: Object-oriented desktop (WPF) and server programming.

Architecture: Good understanding of actor model, OOP, DDD, and concurrency patterns.

Agile: Lead teams with constant prioritization, rapid feedback loops, CI, and automated tests

Projects

- [versago](#): collection of Go packages to improve backend development productivity
- [reversi-cpp](#): A CLI to play Reversi with Dumb CPU Player
- [tokopedia-scraper](#): CLI to search tokopedia products by category via GraphQL
- [CityWeather](#): Sample ASP .NET Core Web application (Web API + ReactStrap)

Experience

PASS3 (August 2022 - November 2023)

Senior Backend Engineer

- Spearheaded the implementation of core decentralized identity services, built **DID ETHR** and **JWT-VC** proof of concept to quickly deliver functionalities.
- Engineered data pipelines and reporting queries for SSP and DSP dashboards using **Kafka** and **ElasticSearch**, achieving resource efficiency with a throughput of 4000 RPS / partition.
- Designed a flexible JWT-based Role-based Access Control (**RBAC**) **Go** library, enhancing backend services.
- Reduced code duplication incrementally by using custom **Go ORM** that can integrate with legacy transactional codes to replace hand-written SQL queries

Ruang Guru (December 2021 - July 2022)

Senior Backend Engineer

- Automated monthly student reports, optimizing throughput by more than 10x by directly accessing **ElasticSearch**.
- Engineered backend solutions for stars and medals, boosting engagement for Ruang Belajar SD students using **Go**, Redis, and **MySQL**.

AccelByte (January 2021 - November 2021)

Senior C++ Developer

- Prevented internal SDK developers from accidentally breaking clients' code by creating a **C++ Header SemVer Checker** using Python and libclang
- Enabled SDET/QA to easily write E2E tests for game clients and AccelByte Platform and reduced time to write tests by 3x by creating **Lua/Unreal BDD framework** and make it run on XBOX, PS 4, and Windows

Hariff Daya Tunggal Engineering (March 2020 - December 2020)

Software Engineer Lead

- Led a team to deliver a prototype of the Military Decision Making Process (MDMP) application, emphasizing **resource-efficient Netty**-based backend server.
- Enabled rapid backend development by architecting **Actor-based framework** over Netty
- Introduced **type-safe RPC** messaging protocol over TCP for .NET and Java employing reflection-based serialization.
- Integrated .NET mailkit library into MDMP **WPF** Client

AccelByte (March 2018 - March 2020)

Senior C++ Developer

- Architected easy to use coroutine-based AccelByte **Unity SDK v 1.0.0** with robust standard .NET networking (yield over HttpRequest)
- Ported AccelByte **Unity SDK to web browser / WebGL**, replaced Reflection.Emit with codegens and added compatibility layer for Web API-based websocket (Javascript)
- Led a team to deliver a working prototype of a **cross-platform AccelByte C++ SDK** (Windows, Mac, Linux), emphasizing task-based API and utilizing RTTR and rapidjson.
- Introduced junior to mid-level engineers into modern C++, emphasizing type safety, memory safety, and concurrency by organizing 10 sessions **modern C++ training**

PT Formulatrix Indonesia (January 2016 - February 2018)

Firmware Engineer Lead

- Developed a **fail-proof device terminal** that creates forms dynamically based on device type, preventing sending the wrong command to the wrong device that could cause disaster. Utilized .NET reflection to generate dynamic forms.
- Enabled CAN-based devices to communicate through TCP by creating **TCP to CAN bridge** using Rust and ZeroMQ.
- Introduced **capability-based firmware engineer career ladder** to improve compensation fairness.
- Improved **recruitment funnel efficiency** by automating screening tests and standardizing the evaluation of take-home practical tests.
- Grew the firmware engineer team from **1 person to 5 people**.

PT Formulatrix Indonesia (June 2011 - December 2015)

Firmware Engineer

- Improved **serial proprietary communication protocol** with a non-blocking mechanism, resynchronization feature, reducing communication latency from 1.3 ms to 150 us, and improved robustness for noisy frames.
- Added **routing extension and event-driven architecture** to the serial communication protocol, adding capability for multiple devices multiplexed together in a single channel transport.
- Enabled **on-device unit testing** of non-peripheral-specific code by porting EasyUnit C++ to TI C2000.
- Reduced board bring-up time from 2 weeks to 2-3 days by creating **TI C2000 Formulatrix HAL** (hardware abstraction layer).
- Enabled mechanical and electrical engineers to write automated tests on their device prototype by creating a **Python-based scripting environment**.

- Discovered and fixed 20 critical motion profile bugs after increasing test coverage to 104 cases (C++, TI C2000, Octave).

PT Xirka Silicon Technology (Dec 2009 - May 2011)

Assistant Engineer

- Designed and implemented WIMAX 802.16e MAC Security Sublayer: Traffic Encryption, Message Authentication, Key Generation, and Transmission Protocol (C++, eCOS, Sparc V8).
- Improved UL-MAP and DL-MAP scheduler latency 3x to catch up with the 10 ms OFDMA frame deadline (C, bare metal, Sparc v8).

PT Global Dinamika Informatika (Jan 2009 - Nov 2009)

Junior IT Consultant

- Developed approval pages and master pages for eMOC (electronic management of change) of BP West Java (ASP.NET Web Forms).
 - Developed a workflow backend for business advance and expense claim approval system (ASP.NET Web Forms).
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Education

Gadjah Mada University (2003-2008)

- Computer Science, Faculty of Mathematics and Science
- Final thesis: "Speaker Identification using MPEG-7 ASP and GMM"