

Alan Darmasaputra

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Work Experience

Software Engineer @ AccelByte Inc (January 2018 – present)

Technical Lead of Blackbox Hub and Web (October 2020 - present)

- Lead the Blackbox Hub project from zero to production-ready state used by 8+ game development studios.
- Provide technical direction for the desktop and front-end teams.
- Provide UX and Information Architecture advice for the product design team.
- Provide general advice for adjacent teams (C++ SDK/CLI, backend team, and SRE team) and leadership.
- Write the core algorithm for the download and the binary diffing features of Blackbox Hub.

Technical Lead in cloud customer team (March 2020 - October 2020)

- Provide the technical direction for a customer cloud client-facing team
- Interface with the client to inquire about the client's specific problems and find a matching solution within the company-provided products
- Design and build custom solutions that are compatible with the rest of AccelByte's products.
- Design and build consensus-based protocol to enable fault-tolerant, horizontally scaling, exactly-once task distribution for a heavy-duty diffing backend processor.

Team Lead in game publishing team (March 2019 - February 2020)

- Lead the team and design flow and interface for games and in-game items marketplace-related products.
- Develop the Launcher and the Player Web products into the production-ready stage.
- Participate in the cross-team leadership council. The council is comprised of the identity team, the publishing team, and the social services team.

Software Engineer (January 2018 - March 2019)

- Lead the prototype project of AccelByte Launcher and Player Web, now used by almost all AccelByte Cloud Clients.
- Write the core algorithm for the download and the binary diffing features of Launcher.
- Introduce a design pattern inspired by Rust's type system to significantly reduce the crash count of the Launcher and Player Web project.
- Lead project rewrite of Player Web following its code acquisition from a third-party developer to adhere to the robust design pattern mentioned above.

Freelance Projects (2015 - 2017)

- Worked on full-stack projects with Java, PHP (Laravel), and NodeJS, including:

- Shop inventory system
- Warehouse inventory system
- Advertisement web add-on

Study-related Projects (2014 - 2016)

- Created an HTML5 Canvas-based vertical scrolling shooter game
- Created an HTML5 Canvas-based top-down shooter with real-time combat AI
- Free-for-all online exam web app

Technical Skill

Main Expertise:

- System Design for performance, robustness, thread-safety, and well-organized knowledge of a codebase
- Intra-component and inter-components interface and architecture design for effective human-to-machine and machine-to-machine communication.
- Technical change and versioning management for effective and manageable changes for software products and protocols.
- Process management for effective inter-team and intra-team workflow and communication.
- Main Language: Rust and TypeScript

Advanced:

Frontend and backend application development, API design, CI/CD, Cloud Computing, Microservices, Containerization, Functional Programming, Consensus Algorithm.

Docker, NodeJS, Electron, React, GatsbyJS, Git, Bitbucket

Experienced:

Identity and OAuth, RBAC, Graph Algorithm, Graph DB, Interaction Design, Game Engine Development, Cryptography, Project Management, FFI

C, SQL, GraphQL, HTML, CSS

WASM, Kubernetes, Amazon Web Services (AWS), WinAPI, Redis, PostgreSQL, MongoDB, JIRA, Gitlab Runner

Basic:

Shader Programming, AI, Deep Learning, Blockchain, Decentralized ID and Verifiable Credentials, Mobile Application Programming

C++, OpenGL, WebGL, Java, PHP, Go, Python, Haskell, HLSL, Solidity

Projects

Hobby Projects:

- <https://valand.dev/blog>: Various semi-technical articles
- <https://github.com/Kelerchian/installer-toolbox>
 - Incomplete collection of tools for making self-executing archive for Windows.
- <https://github.com/Kelerchian/machine-tree>
 - Experiment to find the proper API for building tree-structured persistent machines. This project is inspired by the idea of “React without ReactDOM and React-native built in Rust”, which creates a tree of pure persistent machines that can later be bound to various APIs (DOM, WebGL, WebGPU, TUI) or used as non-UI tree-shaped machines.

- <https://crates.io/crates/assign> (assign.rs)

Professional and proprietary:

Blackbox Hub:

A desktop application that provides game developers a means to distribute game builds internally and runs playtest sessions. Including features such as the *latest known good auto-update, binary distribution and patching mechanism, integration with OS, and various consoles.*

See more about the BlackBox project at <https://accelbyte.io/blackbox/>

BuildInfo Differ Distributed Work Queue - Protocol Design

BuildInfo Differ Distributed Work Queue is a consensus-based protocol that enables fault-tolerant, horizontally scaling, and exactly-once task distribution for a long-running backend processor fleet.

BuildInfo Differ is a backend processor that produces binary diffs between two versions of a game. The work queue allows multiple instances of BuildInfo Differ to work concurrently without redundancy and to juggle tasks between different instances when an instance crashes. The Work Queue is designed to be reusable for different types of processors and to need only minimal change on integration to existing processors.

BuildInfo Differ currently backs AccelByte Launcher and Blackbox Hub.

Launcher and Player Website for AccelByte Cloud:

A complete stack of white-labeled game distribution and publishing services. Features highlight:

- Game download and update with AccelByte Launcher
- Web-based marketplace for game and in-game item transactions.

See more in: <https://accelbyte.io/player-portal-launcher-patcher/>

Others in proprietary:

- (Rust) Internal tool for quickly releasing custom builds of Blackbox Hub with customizable parameters.
- (Rust) Native module for Blackbox Hub to enable communication with WinAPI
- (Rust) Run React App with changeable parameters at deploy-time with a Rust-based rewrite engine.
- (TypeScript) OpenAPI custom TypeScript code generator

Education

2013-2017 **Bachelor of Computing**; Universitas Kristen Duta Wacana, Yogyakarta. *GPA: 3.84/4.00.*

Thesis title: Utilizing Driver's Peripheral Interaction for Parking Space Finder Application User Interface