ALAN DARMASAPUTRA

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EXPERIENCE

Actyx AG   **Munich, Germany**
Distributed System Engineer   February 2023 - November 2024

— Developed Actyx, a **Rust**-based local-first peer-to-peer **event streaming and database engine**
— Developed Actyx Node Manager, an Electron and React-based database administration tool for Actyx
— Integrated Actyx to a manufacturing robot swarm project at https://sw-machines.com/
— Acted as a **researcher** for the **European Union Tardis Project on decentralized computation**
  — Developed a TypeScript library for building **event-driven, fully-decentralized state machines** (https://github.com/Actyx/machines)
  — Worked with Tardis Project members in developing libraries, toolkits, programming language, and Interpreter/Compiler focusing on decentralized computation

Technical Stack:
  TypeScript/JavaScript, Rust, Electron, **React**, Tokio, IPFS, libp2p

Research Published:
  Kuhn, R., Darmasaputra, A. (2023) **"Behaviorally Typed State Machines in TypeScript for Heterogeneous Swarm**s" https://arxiv.org/abs/2306.09068

AccelByte Inc   **Seattle, WA, United States**
Technical Lead / Senior Frontend Engineer   October 2018 - February 2023

— As a part of the **development council**, established the **standard for development, deployment, and testing** and the **product lining strategy**
— Acted as the **technical lead**, **team manager**, and **architect** for a core product: AccelByte's Development Toolkit' Game Binary Distribution
  — **Managed and mentored the Frontend Developers** in the AccelByte Development Toolkit team
  — Developed a build distribution desktop application with **multi-platform integrations (PlayStation, Xbox, and Windows)**
  — Architected and optimized the service's core build distribution mechanism
  — Architected a consensus system for improving the **scalability** of the delta generation backend service
  — Architected AccelByte Development Toolkit's inter-product **communication protocol**
  — Worked closely with Striking Distance Studios (The Callisto Protocol) to integrate AccelByte's Development Toolkit to accelerate their development and testing feedback process
— Acted as the **consulting technical lead**, **team manager**, **and architect** for AccelByte's Professional Services clients
  — **Managed a team of nine** (Product Manager, Project Manager, 3 Frontend Engineers, 2 Automation QA, 2 Backend Engineers). Responsible for team cohesiveness, **mentoring software engineers**, and aligning the team to the **company's overarching goal**
  — Created, architected, and implemented Versus Evil Player Portal Website and Game Launcher
    — Works include: Desktop Launcher, Player Portal Website, Game Storefront, Session Management, Payment Gateway, Content Management System (CMS) integration, Website Embedding
  — Created, architected, and implemented Plus9 Player Portal Website and Game Launcher
    — Works include: Desktop Launcher, Player Portal Website, Game Storefront, Session Management, Payment Gateway, Content Management System (CMS) integration, Website Embedding
    — Worked closely with clients to integrate AccelByte's product into their existing environment and vendors
  — Developed **Admin Portal** for Gearbox Software (Borderlands 3)

Technical Stack:
  TypeScript/JavaScript, C++, **Rust**, **React**, **Angular**, **Electron**, Kubernetes, Docker, Redis, Elasticsearch, AWS

Freelance   **Yogyakarta, Indonesia**
Fullstack Software Engineer   2015 - 2018
— Developed **NodeJS** and React-based web-embeddable interactive mini-games
— Developed a **Laravel**-based warehouse inventory management application
— Developed a **Java**-based shop inventory management application
— Developed a JavaScript/**HTMLCanvas** game engine and AI system

Software Seni   **Yogyakarta, Indonesia**
Intern Fullstack Software Engineer   2015 - 2016
— Developed a WordPress website for hotel and villa booking and rental management

TECHNICAL SKILLS

Frameworks/Library/Tools/Providers:

React, NextJS, NodeJS, ExpressJS, Fastify, Tauri, Electron, Docker, Tokio, Git, Kubernetes, AWS, Jest, MongoDB, PostgreSQL, Kysely, Elasticsearch, Vite

Languages:

TypeScript, Rust, C, C++, Go, SQL, Java, GraphQL, HTML, CSS, SCSS/SASS, OpenGL, WASM, WebGL, HLSL, PHP, Python, Solidity

NOTABLE PROJECTS

Professional and Proprietary

Game Credits (https://www.mobygames.com/person/1032892/alan-darmasaputra/) :
— *The Callisto Protocol (2022)* - Striking Distance Studios
— *Borderlands 3 (2019)* - Gearbox Studios

Actyx:
— *Machine Runner* (https://github.com/Actyx/machines, https://dl.acm.org/doi/10.1145/3597926.3604917, https://arxiv.org/abs/2306.09068):
    Programmable distributed state machine on top of replicated events for P2P cooperative sequential tasks.

AccelByte:
— *AccelByte Development Toolkit* (https://accelbyte.io/development-toolkit):
    A game-build distribution and playtesting platform for game developers to manage and share different game versions across different platforms (Playstation, Xbox, and Windows)
    The product consists of a desktop application, a backend service, a game-embedded library, CLI, and an analytics web application
— *Differ Distributed Work Queue*:
    A fault-tolerant consensus protocol to infinitely scale a fleet of binary diffing processors for Blackbox Hub
— *Launcher and Player Website* for AccelByte Professional Services:
    A white-label and customizable game launcher and game storefront website

Personal and Hobby Projects

Machine Tree (https://github.com/Kelerchian/machine-tree):
    API design experiment for building tree-structured hierarchical and persistent machines. The idea stems from applying the React and actor model for low-level machine hierarchies.

Vaettir (https://github.com/Kelerchian/vaettir)
    TypeScript framework that allows more flexible state management and better code organization. Vaettir uses an active-object approach in contrast to the classic passive storage, based on an asynchronous, observable, destroyable, and environment-agnostic agent. The library comes with an optional first-class React integration.

EDUCATION

Bachelor of Computer Science, Universitas Kristen Duta Wacana   **2013 - 2017**
GPA: 3.84 | Valedictorian | Professor Assistants (Data Structure, Algorithm, Discrete Mathematics)
Bachelor Thesis: *Peripheral Interaction in Car Park Assist Mobile Application*