Bernardo Alvarado

Software Engineer | Netherlands
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EXPERIENCE

Essity | 2020 – Present

Software Engineer | Sep. 2023 – Present | Netherlands
- Architected and developed mission-critical features for an Azure-hosted MES, built with C# / ASP.NET Core and Vue and deployed across ~45 factories.
- Reduced Azure cloud spend by ~47% through systematic auditing and optimization of telemetry and log analytics ingestion.
- Optimized critical Oracle SQL views, reducing query execution time by ~90% and significantly improving MES landing page load performance.
- Optimized CI/CD pipelines by parallelizing execution, reducing build times by ~50% across the team's two primary pipelines.
- Engineered custom VS Code extensions in TypeScript, including an Apache Tomcat integration with automated server lifecycle management and file-watcher-triggered hot reload.
- Standardized Git branching and code-review workflows across the team, improving review quality and lowering deployment risk.

Software Engineer (IoT) | 2021 – 2023 | Germany
- Developed Python ETL pipelines to automate machine sensor time-series data processing at scale, with extraction volumes exceeding 1M rows.
- Designed and developed a reusable Python SDK for the Proficy Historian REST API, standardizing data access across multiple downstream applications.
- Led critical OT/IT integration initiatives using OPC UA to stream real-time machine data into enterprise IT systems.
- Drove factory digitalization initiatives by gathering requirements, prioritizing projects, and aligning stakeholders on capital expenditure decisions.

Working Student (Software Automation) | 2020 – 2021 | Germany
- Developed a Python/RS-232 serial data ingestion service for laboratory equipment, fully eliminating manual data collection.
- Built a local inventory tracking GUI (Python/PyQt5) with WebSocket hardware communication and OpenCV-based automation.

PROJECTS

3D Data Processing & Workflow Platform | Creator & Sole Developer | 3.1M+ downloads
Stack: Kotlin, TypeScript, Vue
- Architected and implemented a high-performance 3D data processing engine, optimizing computational workloads to meet strict latency requirements.
- Designed a background task scheduling system to distribute computationally intensive workloads.
- Designed a JSON-based workflow engine enabling users to create and execute custom pipelines.
- Created tooling in Vue and TypeScript to simplify and speed up content creation for users.
- Owned the full product lifecycle, from feature development and releases to issue triage and community support, serving a user base with millions of cumulative downloads.

Gameplay Modification | Creator & Sole Developer | 3.3M+ downloads
Stack: Java
- Created and distributed a game modification expanding in-game mechanics with custom items and effects.

SKILLS

Languages: Python, C#, TypeScript, Kotlin, Java, JavaScript, SQL (Oracle, MSSQL)
Other: Azure, Vue, Terraform, Docker, CI/CD, DevOps, Linux, OPC UA, PLCs, MES, Git, Vim, REST API, SPAs

EDUCATION

B.Sc. Mechatronic Systems Engineering | Hochschule Rhein-Waal, Germany

LANGUAGES

Spanish (Native), English (Fluent), German (Professional working proficiency), Chinese (Conversational)