Yutaro Yoshii

**Full Stack Engineer**

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Detail-oriented software engineer with expertise in React, TypeScript, and Spring Boot. Successfully lead multiple migration projects, skilled in complex refactor and dependency reorganization. Experienced in protocols including OAuth2 and low-level web APIs. Committed to delivering high-quality, maintainable software solutions.

**Technical Skills**

**Programming Languages**

* **Frontend**: JavaScript, TypeScript, HTML, CSS, Elm, GLSL, Coffeescript, processing
* **Backend**: Java, Kotlin, PHP, Golang, Markdown, Postgresql, Mongodb
* **Systems Programming**: C, C++, Assembly (MIPS, RISC-V), Verilog
* **Scripting**: Bash, Lua, Scheme, Python, Systemd, Makefile
* **Scientific/Research**: Julia, Fortran, Brainbreak, Scheme, R

**Frameworks & Tools**  
React, Next.js, Redux, Vite, Webpack, Express.js, Spring Boot, Jenkins, Gitlab CI, Docker, Oauth2, PKCE, Rest API, WebSocket, Canvas, Three.js, Mongoose

**Non Technical Skills**

* Japanese (Native)
* English (Native equivalent)
* German (B1)

**Experiences**

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| **Rakuten Tech in Europe** | **Berlin, Germany** |
| Full stack engineer | September 2023 — Present |

* Webpack to Vite migration of a React TSX project, as well as the accompanying Jenkins CI & Docker related update
* Maintain a full stack application with NextJS Redux Typescript frontend, and Spring Boot backend
* JavaScript to TypeScript migration, as well as overhaul of a frontend SDK for an iframe-based login widget. I cut down the code size in half, while keeping the same API.
* Maintain an Elm project based on the functional paradigm used by millions of users daily
* Perform a large scale refactor (-3756 lines removed, +1760 lines added) on an internal demo site based on expressjs backend. Make things overall manageable. Update the CI.
* Implement part of Oauth2 protocol (PKCE), write documentations, and perform KT over it
* Perform code review on other colleagues, in the areas including pipeline on gitlab for GCP, frontend, and backend.
* Teach Typescript, Elm, as well as the SOLID principles to an intern based in Berlin, as well as a junior developer based in the US

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| **Open Source Contributor** | | Tokyo, Japan |
|  | 2022 - 2023 | |

* **VoxelForge**: Minecraft-related library ecosystem written in JavaScript and TypeScript. Wrote the nbt encoder-decoder as well as developed a domain specific JSON-like strictly typed serialization language to represent NBT in a text based format. Developed an in-house JSON-superset object validation library.
* **PulseCast**: Pulseaudio-web casting with minimum latency and variable audio quality. Wrote the pulseaudio-web server interface in C++, as well as the web server using NAPI and Node.js. Host the project using Nginx and Cloudflare.
* **Project Amaterasu**: Collection of astronomy-related libraries that are mainly used for gravitational modeling and simulation. Implement FFT accelerated particle mesh simulation, as well as Runge-Kutta based high fidelty orbital calculation.
* **Git-find**: A command-line tool for quickly locating Git repositories by name and remote URL, with customizable search options and clear output formatting. Implement recursive search as well as error handling.
* **Hover-ddns-js**: A DDNS server for the Hover domain provider. Port hover-ddns into javascript, and add systemd service file to be ran as a daemon

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| **Keio university AQUA quantum research group** | | **Fujisawa, Japan** |
| Research Assistant | April 2021— March 2022 | |

* Implement the blossom maximum matching algorithm to analyze the suitability of a given network to be used for quantum connections
* Write force directed graph drawing for network visualization using HTML Canvas and JavaScript
* Study complex wave interference equations and create a 2d simulation of energy distribution as well as amplitude
* Implement a solution to graph coloring problem in QISKIT, and analyze the performance against a classical implementation
* Take part in the development of an online education platform based on React.js

**Other Noteworthy Achievements**

* Project Euler 109 problems completed under handle martian17
* AdventOfCode 2022 and 2023 completed
* Solve “difficult” rated problems on leetcode