Rickson **Yang**

SOFTWARE ENGINEERING • UNIX ENTHUSIAST

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Education

University of Waterloo   *Waterloo, Ontario, Canada*

SOFTWARE ENGINEERING   *2019 - 2024 (**CGPA of 89%**)*

- Candidate for BSE with President's Entrance Scholarship.

Skills

Languages   Java • JavaScript • TypeScript • Python • C# • HTML • CSS • SQL

Tools & Frameworks   React • Node.js/Express • Jetty • Hibernate • MongoDB • Android • Docker • GCP • Heroku • Git

Work Experience

Axonify   *Waterloo, Ontario, Canada*

JAVA DEVELOPER | **JAVA, HIBERNATE, JETTY, MYSQL, COUCHBASE, DOCKER, LIQUIBASE**   *January 2021 - April 2021*

- Developed core server backend with **Java**, **Jetty**, **Hibernate ORM**, and **MySQL**
- Reworked a complex user metrics system tracking **1,000,000+** records, replaced a bulky refresh system with a granular job scheduling system to trigger refreshes. Improving average runtime from **3-4 hours** to **1-5 minutes**
- Worked concurrently with a client developer to integrate pagination and result filters on the platform, reduced load time by over **70%**
- Implemented a new resource management tools with Java **MBeans** to simplify resolving support issues with SCORM modules

DigitalEd   *Waterloo, Ontario, Canada*

FULLSTACK DEVELOPER | **JAVA, APACHE STRUTS, VUE.JS, POSTGRESQL, DOCKER, CYPRESS**   *May 2020 - August 2020*

- Used **Vue.js** and **Java** with **Apache Struts** to modernize the monolithic codebase for the Möbius courseware
- Did foundational research for a document importer which converts DOCX files into interactive lessons in the platform. Built a prototype that extracts paragraphs, tables, and MathJax from DOCX files using Java and **Apache POI**
- Took initiative to create utility **Docker** scripts, improving engineering workflow by reducing unnecessary commands from **9** to **1** line
- Took initiative to start automate manual tests using **Cypress**, reduced relative testing time by over **80%**

Projects

Discourse ⌂ ⬈

PLATFORM FOR LIVE COLLAB-CODING | **TYPESCRIPT, REACT, NODE.JS/EXPRESS, MONGODB, HEROKU**

- Built and deployed a full-stack web application that allows users to create public/private rooms and code together
- Used **Socket.IO** to enable real-time interactions between users in rooms, such as chat and notifications
- Implemented a secure REST API server using **JWT**, connecting user-room sessions and establishing CRUD systems

Gyroll Maze ⌂

A 3D MARBLE TILT MAZE GAME FEATURING A GYROSCOPE | **UNITY, C#, ARDUINO**

- Integrated a DFS maze generation algorithm with interactive objects such as spike balls onto a tilt-controlled platform with **C#**.
- Built and integrated a game controller with angular/tilt-based controls from scratch, using C# and **Arduino** scripts.

Orgmodoro ⌂

A MINIMAL **ANDROID** POMODORO APP | **JAVA, XML**

- Designed schematics and built an intuitive UI workflow with **XML** and **Android Studio**.
- Integrated multiple activities/windows to allow data transfer between background processes using **Java**.

JavaPaint ⌂

A FULL-FEATURED PAINT PROGRAM FROM SCRATCH | **JAVA, SWING**

- Implemented and integrated **undo/redo stacks**, shapes, and toolbars with several data structures created all from scratch.
- Built a fully-featured drawing application using the **Swing API**, featuring options to save, program defaults, modifiers, and more.

Project Witchcraft ⌂

AN ARCADE BULLET-HELL SHOOT'EM UP GAME | **PYTHON, PYGAME**

- Built a system that uses frame states to manipulates animations, fire rates, and beautiful bullet patterns.
- Implemented dynamic difficulty adjustments, high-score systems, and mathematically-refined controls for better user experience.