

# Ri Xin Yang

SOFTWARE ENGINEER

✉ [ri.xin.yang@uwaterloo.ca](mailto:ri.xin.yang@uwaterloo.ca) | 🏠 [rixinyang.me](http://rixinyang.me) | 🌐 [MatoPlus](#) | [MatoPlus](#)

## Skills

**Languages** Python • Javascript • Java • C# • HTML • CSS • SQL

**Tools & Frameworks** Vue.js • React • Node.js • Electron • Cypress • MongoDB • Docker • JIRA • TM4J • Emacs

## Experience

### DigitalEd

Waterloo, Ontario, Canada

FULLSTACK DEVELOPER | **JAVA, APACHE STRUTS, VUE.JS, CYPRESS, POSTGRESQL**

May 2020 - August 2020

- Used **Vue.js** and **Java** with **Apache Struts** to modernize a monolithic legacy codebase for the Möbius courseware.
- Did over **70%** of the foundational research tasks for a document importer that converts DOCX files into interactive lessons in the courseware. Created an early-demo that extracts paragraphs, tables, and MathJax using Java and **Apache POI**.
- Quickly found and fixed more than **10 critical bugs** near version release.
- Took initiative to create utility **Docker** scripts, improving engineering workflow by reducing required commands typed from **9** to **1** line.
- Took initiative to automate manual tests using **Cypress**, reduced relative testing time by **80%**.
- Executed and finished over **30%** of the total **1800+** manual test cases on TM4J during version release.

## Projects

### Sagacity [Hack the North 2019 Finalist] [🔗](#)

A WEB-APP THAT ENHANCES HAND-WRITTEN NOTES WITH OCR AND NLP | **NODE.JS, MONGODB, GCP**

September 2019

- Placed **within the top 12 out of 375+ teams**, judged in terms of wow factor, technical difficulty, originality, and design.
- Generated relevant text around keywords to enhance notes by accessing NLP and OCR models via **Node.js** and **MongoDB**
- Used and integrated an early access build of **GPT-3** for NLP from OpenAI, acquired from open source.

### Gyroll [🔗](#)

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

October 2019 - November 2019

- Built an Arduino controller and integrated angular/tilt-based controls with **C#** and **Arduino** scripts.
- Implemented game object behaviours such as turrets, spike balls, and randomly generated spawn points within C#.

### JavaPaint [🔗](#)

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

April 2019 - July 2019

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

### Orgmodoro [🔗](#)

A MINIMAL **ANDROID** POMODORO APP THAT IMPROVES PRODUCTIVITY | **JAVA, XML**

May 2019 - June 2019

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

### Project Witchcraft [🔗](#)

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

May 2018 - June 2018

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

### Resonance [🔗](#)

A MODERN AND AESTHETIC MUSIC PLAYER REVOLVED AROUND PLAYLISTS | **VUE.JS, ELECTRON**

September 2020 - Present

- Utilized **Vue** components and **Electron** IPCs to control the playlist and music player throughout the program hierarchies.
- Created a menubar from scratch using Vue.js and Electron, providing thematic appearance and better user experience.

## Education

### University of Waterloo

Waterloo, Ontario, Canada

SOFTWARE ENGINEERING

2019 - 2024 (Expected)

- Candidate for BSE with President's Entrance Scholarship.