

# RYAN TSANG

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## SUMMARY

- Proficient in Python, Java, C, HTML, CSS, Javascript, Git, and Racket
- Experienced with data-structures and algorithms and their applicability in real codebases
- Knowledgeable in Full-stack Web-development with React, Javascript
- Some experience in machine learning and genetic algorithms
- Fast-learner, adaptable, teamplayer, and efficient independent worker.

## EXPERIENCE

### Polar

May 2021 - Aug 2021

- Full-stack developer position primarily using Python, Django, React, and Javascript
- Designed and implemented several features to improve user experience using React and Javascript
- Utilized Python and Django to create toggleable features based on user preferences
- Maintained large codebase with Python-based selenium testing scripts

### Musify

April 2021 - Present

- Lead python engineer responsible for creating a script to fetch lyrics for any song, scalable for some languages
- Assisted in the overhaul of the song-database and optimized the storage of files to increase speed and smoothness of the application

## PROJECTS

### Rubik's Cube Solving Robot [github](#)

- Using a raspberry pi, 6 servo motors, as well as a 3D printed frame I designed, and created a robot which solves rubik's cubes
- OpenCV camera recognition to analyze the cube with a cellphone, and a self made python algorithm to solve it with reasonable efficiency
- Working on a python machine learning algorithm to learn to solve the cube itself

### Earth Sense [devpost](#) [github](#)

- React-based web application which displays statistics on various levels of pollution in an area. This project was a winner at Hack the Hammer
- Data is collected through a microcontroller which sends data through firebase, updating the website live
- Data is displayed on a heat-map for users and on dynamic graphs for monitoring
- Using this information, in combination with the Google Maps API, a pathfinding algorithm coded in Python determines optimal paths which avoid pollution

### Tetris AI [github](#)

- Self-learning genetic algorithm coded in pure Javascript which takes an evolutionary approach to learning how to play tetris. Watch the ai evolve [here](#)

### Sociiz [github](#)

- Web-based application built with Python, Flask, Javascript, HTML, and CSS where users can find places to socialize while still promoting social distancing
- New users can create accounts, as well mark new locations on the live updating website
- If the program deems the location to be crowded, an SMS alert is sent to users as a warning

## EDUCATION

- Candidate for a Bachelor of Computer Science, University of Waterloo, 2020 - Present
- Currently a 4.0 GPA
- International Baccalaureate Diploma, St. Robert Catholic High School, 2016 - 2020