

Ethan Guo

University of Waterloo Software Engineering 2023

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SKILLS

Languages: C, C++, Java, Scala, Kotlin, C#, JavaScript, TypeScript, HTML/CSS, Python, Go, SQL

Technologies: React, Unity, Unreal Engine, Android, OpenCV, Qt, Flask, Node, GraphQL, jQuery, Git, Perforce

Skills/Interests: UX/interaction design, Game design, 3D graphics, AR/VR, Computer vision, IoT, Robotics

EXPERIENCE

SDK Software Developer AMD, Markham, Ontario

Sep 2020 – Dec 2020

- Set up automated build and test pipeline for a C++ audio library using Jenkins, CMAKE and Python scripts.
- Led effort to migrate from Perforce to GitHub, including setting up CI with aforementioned Jenkins pipeline.

Unity Developer Spatial Systems, New York, NY

Jan 2020 – Apr 2020

- Overhauled AR/VR-oriented 3D user interface, AR/VR keyboard input and interaction sound effect systems to unify the user experience across different AR/VR platforms and improve feature discoverability ([report](#)).
- Implemented above features and other fixes in Unity 3D under strict timelines to prepare for public launch.

Software Engineering Intern Christie Digital, Kitchener, Ontario

May 2019 – Aug 2019

- Added colour calibration feature to projection mapping software in C++, with a configuration interface in Qt.
- Programmed an industrial robotic arm and built a custom peripheral device using an Arduino and custom PCB to interface with the robotic arm from our software.

Robot Technician Rapid Novor, Kitchener, Ontario

Jul 2018 – Aug 2018

- Developed lab protocols on a robotic pipetting platform using C and Python, streamlining lab operations and enabling previously impractical mass-scale lab assays to be performed.

Software Engineering Intern Teledyne DALSA, Waterloo, Ontario

Jul 2017 – Aug 2017

- Developed computer vision system using OpenCV and Python to localize and guide an industrial robotic arm.

LEADERSHIP EXPERIENCE

Logistics Team Lead Hack the North

Feb 2019 – Present

- 2019: Managed 8 team members with projects ranging from serving 10,000+ units of catered meals to designing efficient processes for registration and judging, in order to host Canada's biggest hackathon with over 1,500 participants.
- 2020: Led the team to pivot from planning an in-person event to planning a virtual event, redesign all aspects of the event, and execute Canada's biggest hackathon online, hosting 3,000+ participants from 48 countries.

Founder and Lead Organizer JAMHacks and JAMHacks 2

Sep 2016 – May 2018

- Created and organized Waterloo's first 12-hour and 24-hour high school hackathons respectively, with an audience of over 200 students and over \$10,000 in sponsorships by 2018.
- Led a team of 5–10 organizers in all areas including sponsorships, promotions, logistics, and technical.

PROJECTS

FightVR 🔗 Red Bull AdrenaLAN Hackathon 2018 — Best VR/AR Hack

Jul 2018

- Created a Unity game for Google Cardboard which uses a second phone as a VR controller.
- Used Unity peer-to-peer multiplayer framework to link the controller phone to the display phone.

Raytracer 🔗

Jan 2018

- Implemented a raytracing graphics engine from scratch in Processing (Java).

Polyspective 🔗 THacks 2 — Best Hardware Hack

Oct 2017

- Created software to automatically switch between multiple live camera feeds in real-time, based on the amount of video and audio activity in each stream.
- Used OpenCV in Python for image analysis and facial feature detection.

Timeline 🔗 Bonfire Hackathon 2017 — Runner Up

Aug 2017

- Created a Chrome extension that analyzes Messenger conversations (in natural language) to find an optimal meeting time, and displays free/busy times visually on a timeline.