Ethan Guo

University of Waterloo Software Engineering 2023

@ ehguo@uwaterloo.ca   github.com/ethguo
📞 226-666-6092   linkedin.com/in/ethguo

SKILLS

Languages: Python, C, C++, Java, Scala, C#, JavaScript, HTML, CSS/Sass, Go, BASIC, VHDL

Technologies: Android, Unity, OpenCV, Qt, Node, Flask, React, jQuery, Git, Arduino

Skills/Interests: UX/interaction design, Computer vision, Natural language processing, Robotics, 3D modeling

EXPERIENCE

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 robot 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 mass-scale lab assays which were previously impractical to be performed.
- Worked with scientists to integrate robot with existing automation systems in the lab such as Evosep.

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 Core Team Lead   *Hack the North*   Feb 2019 – Present
- Planned and executed Canada's biggest hackathon, hosting 2,000+ participants from over 23 countries.
- Managed 8 team members with multiple projects, with tasks including serving 10,000+ units of catered meals, coordinating 300 volunteers, and designing efficient processes for registration and judging.
- Collaborated with 40 organizers across sponsorship, finance, marketing, design, frontend and backend teams.

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.
- Developed website (jamhacks.ca/2018) and registration system using Bootstrap, Pug, Sass, and Node.

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, allowing you to swing a sword in VR.
- 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.

Timelime 🔗 *Bonfire Hackathon 2017 — Runner Up*   Aug 2017
- Created a Chrome extension using Pug, Sass and Node that analyzes Messenger conversations to find an optimal meeting time and displays free/busy times visually on a timeline.