# TSUN MING ANDRE HUI

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## EDUCATION

**Master of Computer Science**, Durham University — Oct 2017 - Jun 2021
Masters of Engineering, First Honors (≥70%)

## EXPERIENCE

**Volunteer Flutter Developer** — Nov 2022
CollAction — *Remote*

- Converted Figma designs and flows into usable in-app widgets, enabling more interactions between users and a Crowd Action, in the form of creating, liking, flagging and deleting comments.
- Wrote unit tests to increase overall testing coverage by 30% across the app.
- Integrated a badge feature from the back-end to the front-end, allowing end-users to view what badges are achievable for a Crowd Action, and what a user has previously earned.

## PROJECTS

**ReVox: Software Soundboard and Voice Changer** — May 2022, current

- Developed an open-source audio manipulation software for Windows, targeted at live-streamers and video-game players, using C++, the Qt Framework, and C libraries including PortAudio, libsndfile, libsamplerate and others.
- Worked with volunteer testers to ensure compatibility and reliability across 100% of Windows 10/11 systems.
- Implemented Digital Signal Processing techniques to achieve different voice-changer effects, resulting in an autotune effect with sub-100ms delay.
- Downloaded over 100 times (Try it here).

**Sideout - GeoJam 2022** — June 2022

- Built a 2D top-down survival game in Unity using C#, within a 3-day time limit, based on a theme provided by event organizers at the start of the event.
- Applied mathematical formulae to realize geometry-centric animations and interactions in the game, achieving 4th place in gameplay among voters.
- Placed 23rd overall out of 254 submissions. (Try it here).

**Single RGB-Camera Hand Pose Tracking** — Oct 2019 - Apr 2020

- Designed a Human-Computer Interface that uses a cheap RGB-camera to detect hand-position and pose, and convert that data into mouse-actions.
- Programmed in Python, utilizing Pytorch to architect and train a pose-detection model with an accuracy of 95%.
- Used OpenCV to apply Computer Vision techniques and efficiently isolate a user's hand from the frame, reducing the frame-processing time by 80%.
- Tested with users of different skin tone and environments to validate the effectiveness of the program across all types of scenarios.

## SKILLS

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| **Technical Skills** | C++, Python, C#, HTML5, CSS3, JavaScript, Java, SQL, OOP, Design Patterns, Documentation, Full-Stack |
| **Others** | Git, GitHub, Qt, Unity, JQuery, Bootstrap, VS Code, Windows, Linux, Trello, Figma, Pytorch, Agile, Unit Testing |