

# Wan-Xuan Zhu

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## EDUCATION

### National Taiwan University

M.S. in Graduate Institute of Networking and Multimedia

Sep. 2021 – Jun. 2023

Taipei, Taiwan

## MASTER THESIS

### Pitch Detection System Based on Discrete Cosine Transform

Python, Swift, Git, GCP

Sep. 2021 – Jun. 2023

Taipei, Taiwan

- Applied audio digital signal processing techniques to achieve accurate pitch evaluation in music.
- Collaborated with the National Symphony Orchestra.

## EXPERIENCE

### Research Assistant, National Taiwan University

Python, Swift, InfluxDB, Git, GCP

Mar. 2021 – Sep. 2021

Taipei, Taiwan

- Developed a Psychiatric Patient Monitoring System with mobile frontend, server-side backend APIs, smartwatch integration, and automated server-side scheduling.
  - \* Achieved a 99% reduction of manual monitoring workload for 1,767 ADHD and ASD patients at NTUH.
- Reduced the preprocessing workload by 98.6% from three days to five minutes by training a deep learning-based object detection model for the Osteoarthritis classification research.

### Software Engineer, Colatour Travel Service Co., Ltd

Lead iOS Developer, Swift, C#, .NET, Git, GCP, MVP

Jan. 2018 – Mar. 2020

Taipei, Taiwan

- Led a team of 3 engineers in developing the B2C e-commerce mobile app, with over 100 functional pages and 146,497 downloads.
- Developed an internal communication system mobile app for 1,191 company colleagues.
- Involved in the full software development lifecycle, from planning and design to development to the App Store, testing, user analysis, maintenance, feature addition.

## PROJECTS

### Mobile App, Frontend, Backend, Swift, Python, Flask, Git

Speech Emotion Recognition iOS App: Real-Time Audio Analysis with Flask Backend for Data Processing

### Desktop App, Computer Vision, Python

Real-Time Gesture Recognition App: Detect and Track Hand and Motion Gestures to Control Models via Camera

### Mobile App, Game, Frontend, Backend, C#, Python, MySQL

Virtual Reality Game Android App: Escape Room Adventure Game

### Web Application, Game, Frontend, Backend, Java, JavaScript, HTML/CSS, MySQL

Online Game for Pet Adoption, Training, and PvP Battles

Portfolio: [youtube.com/@WanXuanZhu](https://youtube.com/@WanXuanZhu)

## PUBLICATIONS

**Co-Author**, “Successful Real-World Application of an Osteoarthritis Classification Deep-Learning Model Using 9,210 Knees—An Orthopedic Surgeon’s View”, J. Orthop. Res., 2022

**Co-Author**, “Training a Deep Contextualized Language Model for International Classification of Diseases, 10th Revision Classification via Federated Learning: Model Development and Validation Study”, JMIR Med Inform, 2022

## SKILLS

**Languages:** C++, Python, Java, Swift

**Tools and Libraries:** Git, SourceTree, Slack, Flask, MySQL, Postman, Firebase (for Crashlytics, Notifications, and Distribution), Google Analytics, Google Cloud Platform (GCP), Jenkins