

# 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*

### Fu Jen Catholic University

*B.B.A. in Information Management*

Sep. 2013 – Jun. 2017

*New Taipei City, Taiwan*

## MASTER THESIS

### Pitch Detection System Based on Discrete Cosine Transform

Sep. 2021 – Jun. 2023

*Advisors: Feipei Lai, Ph.D., Yiju Chen, M.S.*

*Taipei, Taiwan*

- Applied audio digital signal processing techniques to achieve accurate pitch evaluation in music.
- Collaborated with the National Symphony Orchestra to enhance mobile app's functionality and performance.

## EXPERIENCE

### National Taiwan University, Medical Informatics Lab

Mar. 2021 – Sep. 2021

*Research Assistant*

*Taipei, Taiwan*

- Developed a Psychiatric Patient Monitoring System with Frontend, Backend, and Smartwatch Integration
  - \* Eliminated 99% of manual monitoring workload for 1,767 patients at NTUH by designing the system workflow, integrating the mobile app, wearable smartwatch detection, and server-side backend APIs.
- Contributed to research on Osteoarthritis Classification using Deep Learning
  - \* Reduced the preprocessing workload by 98.6% by training a YOLOv4-based object detection model.

### Colatour Travel Service Co., Ltd

Jan. 2018 – Mar. 2020

*Software Engineer, Lead iOS Developer*

*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.
- Built a B2B mobile app featuring in-app webpage to support business processes.

## PROJECTS

### Mobile App, Frontend, Backend

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

### Desktop App, Computer Vision

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

### Mobile App, Game, Frontend, Backend

Virtual Reality Game Android App: Escape Room Adventure Game

### Web Application, Game, Frontend, Backend

Online Game for Pet Adoption, Training, and PvP Battles

Portfolio: [youtube.com/@WanXuanZhu](https://www.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, Bitbucket, Slack, Flask, MySQL, Postman, Firebase, Google Cloud Platform, Jenkins