

# Wan-Xuan Zhu

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## EDUCATION

### National Taiwan University

Sep. 2021 – Jun. 2023

M.S. in Graduate Institute of Networking and Multimedia

Taipei, Taiwan

- Thesis: Pitch Detection System Based on Discrete Cosine Transform
  - \* Developed the music evaluation system using audio signal processing techniques.
  - \* Collaborated with the National Symphony Orchestra.

## EXPERIENCE

### Research Assistant, NTU Medical Informatics Lab

Mar. 2021 – Sep. 2021

Python, InfluxDB, Git / Python, TensorFlow, CNN, YOLOv4

Taipei, Taiwan

- Reduced data collection workload by 99% from 360 times to 1 time a month for 1,767 individuals at NTUH.
  - \* Developed the psychiatric vital signs monitoring system with mobile, smartwatch, and server integration.
- Reduced the preprocessing workload by 99% from 12 hours to 5 minutes for the Osteoarthritis research.
  - \* Developed the detection and image cropping system by training a deep learning object detection model.
- Contributed to research on:
  - \* Classifying Osteoarthritis using CNN.
  - \* Predicting Mood Symptoms in Autism Spectrum Disorder using machine learning.
  - \* Detecting IHCA in Hospitalized Patients using machine learning.
  - \* Classifying International Classification of Diseases using Transformer.

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

Jan. 2018 – Mar. 2020

Lead iOS Developer, Swift, Git, GA, Firebase

Taipei, Taiwan

- Led a team of 3 engineers to develop a B2C e-commerce mobile app with 100+ pages and 146,497 downloads.
- Involved in the full software development lifecycle, from design, development, App Store deployment, user analysis, and maintenance to feature addition.

### Freelance Developer

Project-Based

Python, MS SQL Server

- Developed the AI-based research scoring desktop platform for Industrial Technology Research Institute (ITRI).

## PROJECTS

### Mobile App, Audio Processing, Python, Flask, Git

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

### Desktop App, Computer Vision, C#, Python, Unity, MediaPipe

Real-Time Gesture Recognition AR App: Detect and Track Motion to Control 3D Models via Camera

**Portfolio:** [youtube.com/@WanXuanZhu](https://youtube.com/@WanXuanZhu) (Additional projects included, such as VR, AR, and more)

## PUBLICATIONS

### Co-Author, TensorFlow, CNN

“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, PyTorch, Transformer

“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

**Tools and Libraries:** Git, SourceTree, Slack, Flask, Postman, Firebase, Google Analytics, Docker, AWS, Unity, Accelerate vDSP, TensorFlow, PyTorch