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 (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