Wan-Xuan Zhu

+886-909-561-285 | wxn.zhu@gmail.com | linkedin.com/in/Wan-Xuan-Zhu | Portfolio: youtube.com/@WanXuanZhu

EDUCATION

National Taiwan University — Sep. 2021 – Jun. 2023
M.S. in Graduate Institute of Networking and Multimedia — Taipei, Taiwan

MASTER THESIS

Pitch Detection System Based on Discrete Cosine Transform — Sep. 2021 – Jun. 2023
Python, Swift, Git — 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 — Mar. 2021 – Sep. 2021
Python, Swift, InfluxDB, Git — 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 in 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 — Jan. 2018 – Mar. 2020
Lead iOS Developer, Swift, C#, .NET, Git, MVP — 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

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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, Jenkins