

# Chih Chuan Huang



✉ masonhuang@gmail.com

☎ +886 907120297

## RESEARCH INTEREST

- **Human-Computer Interaction**
  - *Digital Arts, Interactive systems and tools*
- **Computer Vision**
  - *2D Image Processing, 3D Human Pose Estimation*

## EDUCATION

- **National Tsing Hua University** **Taiwan**
  - *Bachelor of Business Administration, College of Technology Management* **2021-2025**
    - **Program:** Interdisciplinary in Computer Science and Quantitative Finance
    - **GPA:** 3.57/4.0
    - **Relevant Course:** Data Structures, Operating Systems, Computer Architecture, Linear Algebra, Algorithms, Applied Cryptography, Data Science, Introduction to Computer Networks, Discrete Mathematics

## RESEARCH AND INDUSTRY EXPERIENCE

- **Innovedus Inc.** **Taipei, Taiwan**
  - *Software Engineer Intern* **2024-present**
    - Developed models to be well-utilized on Kneron NPU, including image segmentation, and voice recognition
    - Designed and implemented the company's core external application, KNEO X
    - Specialized in quantization and pruning to reduce model size and complexity while maintaining accuracy
- **Multimedia Information System Lab, National Tsing Hua University** **Hsinchu, Taiwan**
  - *Undergraduate Researcher* **2023-present**
    - **Advisor:** Min-Chun Hu

## PEER-REVIEWED CONFERENCE PUBLICATIONS

(\* denotes equal contribution)

- [C1] Alfred Lan, Tai-Chen Tsai, **Chih-Chuan Huang**, Pu Ching, Tse-Yu Pan, Min-Chun Hu, "ImmerseSketch: Transforming Creative Prompts into Vivid 3D Environments in VR". In *ACM SIGGRAPH 2024 Posters* (SIGGRAPH ' 24)
- [C2] 蔡岱臻, **黃稚笙**, 許程胤, 張舜涵, 李旻穎, 胡敏君, 潘則佑, "結合肢體與音訊特徵之個人化鋼琴演奏視覺系統設計". In *The 11th Annual Conference of Taiwan Association of Computer Human Interaction Poster* (TAICHI ' 25)

## PRE-PRINTS AND TECHNICAL REPORTS

(\* denotes equal contribution)

- [P1] Tai-Chen Tsai, **Chih-Chuan Huang**, Shun-Han Chang, Cheng-Yin Hsu, Hsin-Ying Lee, Kai-Hsiang Wen, Tse-Yu Pan, Min-Chun Hu, "PerformaVis: Real-Time Affective Music Visualization Driven by Pianist's Bodily Expressions". In *Submission*

## TEACHING EXPERIENCE

- **Teaching Assistant, National Tsing Hua University** **Hsinchu, Taiwan**
  - *Hold lab discussion and office hour weekly, design and grade assignments, projects and exams.*
    - **Software Studio:** An undergraduate-level course in the CS core required. **Spring 2025**
    - **Introducton to Programming I:** An undergraduate-level course in the CS core required. **Fall 2025**

## PROJECTS

- **ONNXNPU-Toolkit** **Taiwan**
  - *Python, Git, ONNX* **2025**
    - An open-source toolkit to validate and optimize models for Kneron NPU automatically
    - Decreased 50% of time to develop and deploy models on NPU
- **Music Performance Expression System** **Hsinchu, Taiwan**
  - *C#, Unity* **2025**

- Collaborated with three partners and one piano artist to design and develop an interactive music visualization systems
- Mainly focused on using C# to analyze audio feature including RMS, tempo and onset

### 3D Human Pose Analysis

Hsinchu, Taiwan

Python, Pytorch, SMPL

2025

- Finetuned a dual stage adaptation model with BEDLAM, EMDB and ThreeDPW dataset based on MPS-Net

### Hand Motion-Based Multimodal Data for Emotion Classification in Piano

Hsinchu, Taiwan

Python

2024-2025

- Collaborated with two partners to collect Hand Motion-Based multimodal data in piano performance
- Finetuned human skeleton using STGCN++ backbone and compare with other models with our own dataset

### Boxing Information System

Hsinchu, Taiwan

React.js, Git, Figma

2024-2025

- Created an information system to optimize data collection and integration for school boxing teams
- Enabled data analysis and export contest features for coaches and athletes

### The Comparison of Image Segmentation in VR Environment

Hsinchu, Taiwan

Python, C#, Unity, Figma

2024

- Compared the application and performance between CLIPSeg, SAM2, and Crop with various input format
- Passed the preliminary selection of NTHU IoS Undergraduate Project Competition

### Voice Recognition Using ResNet18

Taipei, Taiwan

Python, ONNX

2024

- Developed and deployed Voice Recognition module on Kneron KL520

### VR Interactive Painting: Theme-Based Scene and 3D Material Creation

Hsinchu, Taiwan

Python, C#, Unity, ONNX

2023-2024

- Handled VR screenshot, communication between Unity & Python, and 2D object segmentation
- Implemented ONNX to Segment Anything Model that enhance accuracy in segmentation for about 30%

## LEADERSHIP AND EXTRACURRICULAR ACTIVITIES

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### Department Basketball & Badminton Team, NTHU

Taiwan

Team Leader

2021-2024

- Led the basketball team to the playoffs once

### HSNU Alumni Windband

Taiwan

French Horn Player

2019-2025

- Performed in National Concert Hall in 2019
- Served as group leader between 2022-2025

## SKILLS

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### Language

Chinese (native), English (proficient, TOEFL 83), German (beginning)

### Programming

C++, Python, React.js, C#, HTML, CSS, Javascript, Typescript

### Other

Git, L<sup>A</sup>T<sub>E</sub>X, Figma, Unity, Linux, macOS, Docker, Cocos Creator, Google Firebase