Chih Chuan Huang

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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-utlized 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] 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 *Adjunct Proceedings of the 37th Annual ACM Symposium on User Interface Software and Technology* (UIST '25)

[C2] 蔡岱臻, **黃稚筌**, 許程胤, 張舜涵, 李炘穎, 溫凱翔, 潘則佑, 胡敏君, "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) 📄

[C3] 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 Special Interest Group on Computer Graphics and Interactive Techniques 2024 Posters* (SIGGRAPH '24) 📄

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*
  - **Introduciton to Programming I**: An undergraduate-level course in the CS core required.   *Fall 2025*

- **Workshop Instructor, Innovedus & Kneron**   **Taiwan**
  Hold workshop discussion, and instruct 30+ students on AI core technologies
  - **人機進化創新時代**: An hand-on AI workshop for Leadership Development Program at NTHU   *Dec. 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

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

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

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

Other
Git, LaTeX, Figma, Unity, Linux, macOS, Docker, Cocos Creator, Google Firebase