Chih Chuan Huang

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Research Interest

- **Machine Learning**
  Test-time Preference Alignment, Machine Unlearning, Persona Alignment, Representation Learning
- **Multimedia**
  Digital Arts, AI-generated Content

Education

- **National Taiwan University** — **Taipei, Taiwan**
  M.S. in Computer Science, Graduate Institute of Networking and Multimedia — *2026-2028*
  - **Advisor**: Dr. Hsuan-Tien Lin
- **National Tsing Hua University** — **Hsinchu, Taiwan**
  B.B.A., College of Technology Management — *2021-2026*
  - **Program**: Interdisciplinary in Computer Science and Quantitative Finance

Research and Industry Experience

- **Immersive Graphics and Visual Intelligence Lab, NTHU** — **Hsinchu, Taiwan**
  Undergraduate Researcher — *2023-2026*
  - **Advisor**: Dr. Min-Chun Hu & Dr. Hung-Kuo Chu
  - **Collaborator**: Dr. Tse-Yu Pan, National Taiwan University of Science and Technology
- **Innovedus Inc.** — **Remote**
  AI Software Engineer Intern — *2024–2025*
  - Investigated quantization and pruning strategies to reduce model size while preserving accuracy
  - Deployed speech recognition on the Kneron KL520 NPU by porting Transformers to an MFCC + ResNet18 pipeline

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 38th 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)

Pre-prints and Technical Reports

(* denotes equal contribution)

[P1] **Chih-Chuan Huang**, Shou-De Lin, Hsuan-Tien Lin, "Not Yet Taught, Already Known: Evaluating LLM Unlearning at Curriculum Stage". *Under Review*

[P2] Max Ku, Nok-Kan Law, Yu-Chien Tang, Shih-Ying Yeh, Ping Nie, Andy Zheng, Tat Hei Lai, Fei-Yueh Chen, Nikko Yu, Wei-Chieh Sun, Suzy Huang, Chiao-Wei Hsu, **Chih-Chuan Huang**, Chak-Wing Mak, Ho Yin Sam Ng, Edisy Kin Wai Chan, Min-Hung Chen, Ho Kei Cheng, "World Editing: Intervening on Executable Worlds at Increasing Depth". *arXiv preprint arXiv:2610.02331*

Teaching Experience

- **Teaching Assistant, National Tsing Hua University** — **Hsinchu, Taiwan**
  Hold lab discussion and office hour weekly, design and grade assignments, projects and exams.
  - **Computer Vision Practice with Deep Learning**: A graduate-level course in the TAICA CV Program. — *Fall 2025*
  - **Introduction to Programming**: A core course in the TAICA Applied AI Exploration Program. — *Fall 2025*
  - **Software Studio (Head TA)**: An undergraduate-level course in the CS core required. — *Spring 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. 2024*

Projects

- **Clinic Employee & Operations Platform** — **Taipei**
  Next.js, TypeScript, PostgreSQL, GCP Cloud Run, Vitest, Playwright — *Jun.–Sep. 2026*
  - Co-built a two-site clinic's operations platform used daily by 56 staff
  - Built an approval engine with versioned chain templates and parallel quorum signing, guarded by locks and CAS
- **BitoGuard** (Oral Presentation) — **Taipei**
  AWS, Python, Git, Typescript, FastAPI, Docker, Machine Learning — *2026*
  - Engineered 60 features, and a 3-layer Leave-One-Out (LOO) toxicity scoring mechanism and graph-based features
  - Trained a LGBM model utilizing Focal Loss to handle severe class imbalance (3.5%), achieving F1 score 0.7
- **XMEN: A Recurrent Dueling DQN for Minecraft Zombie Combat** — **Taipei**
  Python, Reinforcement Learning, — *2026*
  - Designed a multi-modal Dueling DRQN agent fusing CNN visual features with structured spatial vectors via LSTM
  - Achieved 68x kill rate and 4x survival gains over visual-only DQN baselines in Project Malmo
- **Gossip-ES: Decentralized Evolution Strategies via Network Topologies** (2nd in Peer Review) — **Taipei**
  Python, NumPy, Multiprocessing, asyncio — *2026*
  - Built a gossip-based decentralized ES framework reaching 100% success on Rastrigin-32, where centralized ES fails
  - Designed a staleness-weighted async mixing rule that reaches synchronous-level quality 4x sooner under stragglers
- **Autonomous Parking Planning System** — **Taipei**
  Python, MPC, Hybrid A, Deep Reinforcement Learning* — *2026*
  - Compared MPC, Hybrid A* with Reeds–Shepp analytic shots, and SAC deep RL for perpendicular and parallel parking
  - Extended the Hybrid A* planner to tractor-trailer reverse path planning; ranked in the top 25% of course projects
- **Face Recognition Attendance System** — **Taipei**
  Python, Pytorch, ONNX, Git, Kneron Toolchain, NPU — *2025*
  - Implemented face recognition pipeline (MTCNN detector + ResNet embeddings) for real-time authentication
  - Automated data management with NAS logging and designed reporting module for usage insights

Honors and Awards

- **Selected Participant, Technical Alignment Research Accelerator (TARA)** — **Taipei**
  Selected for the 2026 Taipei cohort of the AI alignment research program — *2026*
- **First Prize, Agent for Truth: AI Anti-Fraud Hackathon** — **Taipei**
  Awarded 1st prize for developing an AWS-deployed AI system that detects cryptocurrency mule accounts for BitoPro — *2026*
- **CTM International Academic Engagement Scholarship** — **Hsinchu**
  Selected recipient supporting attendance at UIST 2025 — *2025*

Leadership and Extracurricular Activities

- **Guided Generation Group** — **Remote**
  Member — *2025*

Skills

- **Programming**
  Python, C/C++, TypeScript, JavaScript, HTML/CSS, Rust
- **AI/ML**
  PyTorch, TensorFlow, Hugging Face, OpenCV, Scikit-learn, Pandas, NumPy
- **Tools & Infrastructure**
  React.js, Next.js, FastAPI, AWS, Google firebase, Docker, Git, Linux, Unity, LaTeX