

PING-YI CHEN

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EDUCATION

National Cheng Kung University

Sep 2021 - Present

Bachelor of Computer Science and Information Engineering

- Academic excellence award (Top 5%) 1st semester, 2021
- GPA: 3.93/4.3

Taoyuan Municipal Wu-Ling Senior High School

Sep 2018 - Jun 2021

Science Gifted Class

AWARDS

- 5th APAC HPC-AI Competition - Third Place and Best Deep Learning Performance Award, among 24 teams from 12 countries
- 20th Macronix Science Awards - Outstanding project (the highest price)
- NCKU Innovation Demo Day Pitch Competition - Second Place

LEADERSHIP

- Speaker at SITCON 2024
- Co-organizer and instructor at Wu-Ling Information Studying Club
- Captain of Team NCKU in the 5th APAC HPC-AI Competition
- Teaching assistant at 2023 Fun AI Winter Camp, 2022 SITCON Hour Of Code, and 2021 Coding-X Python Camp

RESEARCH EXPERIENCE

Research Intern

July 2022 - Feb 2023

Research Center for Information Technology Innovation, Academia Sinica

Supervisor: Prof. Yi-Hsuan Yang

Piano Music Generation Using Video Diffusion Model - [paper](#) | [demo](#)

- Developed a polyphonic music generation model capable to be conditioned by chord, melody, prompting and infilling without retraining by guiding with the gradient of various objectives in inference time
- Increased training speed by 3.5x using distributed data parallel across 4 V100s on the Taiwania2 supercomputer
- Built an automatic pipeline which has convert 2700 music pieces from raw audio to symbolic representation

Independent Study Student

Sep 2019 - Dec 2020

CI Lab, Department of CSIE, National Central University

Supervisor: Prof. Mu-Chun Su, Sih-De Liou

Using VAE-pix2pix to Generate Realistic Mountain Terrain - [paper](#) | [demo](#)

- Achieved 51% lower FID and 39% lower L1 loss on heightmap generation by incorporating a VAE with baseline Pix2pix model
- Won second prize in the CSIE category in National Primary and High School Science Fair

PROJECTS

- Grapycal: A graphical and highly interactive programming language - [GitHub](#) | [demo video](#)
- A web application letting human and AI make music collaboratively - [website](#)
- A VST for reverb audio effect by implementing an 8-channel IIR with JUCE and C++ - [GitHub](#)
- A web dashboard for SLURM with Python, Flask and JS/HTML - [GitHub](#)
- An AI for 4-wheel car trained to move to a given position with PPO with a simulation environment build with Unity - [GitHub](#)

SKILLS

- Scored 890 on TOEIC
- Familiar with PyTorch, Unity, Docker and Git