

Yi Jen (Ian) Shih

UNDERGRADUATE RESEARCHER

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Education

National Taiwan University(NTU)

Taipei, Taiwan (R.O.C.)

B.S. IN ELECTRICAL AND ENGINEERING

Sep. 2018 - Jun. 2022

- **GPA:** overall: **4.11/4.30 (3.93/4.00)**, last year: **4.26/4.30**
- **Honors:** Dean's List Award
- **Selected Courses:** Data Structure and Programming 2019 Fall (**A+**), Machine Learning 2020 Spring (**A+**), Digital Speech Processing 2020 Fall (**A+**), Data Science 2021 Fall (**A+**), Deep Learning for Human Language Processing 2022 Spring (**A+**)

Publications * indicates equal contributions

- [1] **Yi-Jen Shih**, Hsuan-Fu Wang, Heng-Jui Chang, Layne Berry, Hung yi Lee, and David Harwath. Speechclip: Integrating speech with pre-trained vision and language model. *IEEE SLT*, 2022.
- [2] **Yi-Jen Shih**, Shih-Lun Wu, Frank Zalkow, Meinard Müller, and Yi-Hsuan Yang. Theme transformer: Symbolic music generation with theme-conditioned transformer. *IEEE Transactions on Multimedia*, 2022.

Research Experience

Speech Processing Lab, NTU, Advisor: Prof. Hung-Yi Lee

Taipei, Taiwan

UNDERGRADUATE RESEARCHER

Sept. 2021 - Current

- Participate in JSALT workshop Visually Enhanced Group [\[URL\]](#)
- JSALT Ending Day Presentation [\[URL\]](#)
- Proposed SpeechCLIP [\[Github\]](#) [\[Blog\]](#) [\[arXiv\]](#)
 - Bridge unparallel speech and text data via visual signal
 - Achieve SOTA on Image-Speech Retrieval and conduct
 - Accepted by 2022 IEEE Workshop on Spoken Language Technology(SLT)

Music and AI Lab, Academia Sinica, Advisor: Prof. Yi-Hsuan Yang

Taipei, Taiwan

RESEARCH ASSISTANT

Jul. 2020 - Jun. 2022

- Collect dataset for paired classical musical themes and entire composition
- Revise LCS method for theme retrieval
- Proposed Theme-conditioned music generation [\[Github\]](#) [\[Blog\]](#) [\[arXiv\]](#)
 - Accepted by *IEEE Transactions on Multimedia* [\[link\]](#)
 - Won **1st prize** and **Most Popular Award** at Bachelor Thesis Award Electrical Engineering Dept. at NTU
 - Invited talk at MILA x Vector [\[Youtube\]](#)
- Working on Transformer vq-vae for Multitrack Music Generation

Teaching Experience

Machine Learning Course by Prof. Hung-Yi Lee

Taipei, Taiwan

TEACHING ASSISTANT

Feb. 2020 - Jun. 2020

- Design machine learning assignment for phoneme classification and grading

Deep learning for Human Language Processing Course by Prof. Hung-Yi Lee

Taipei, Taiwan

TEACHING ASSISTANT

Sept. 2022 -

- Lead undergraduate students doing research project

Experience

UC Berkeley

CA, USA

SUMMER SESSION STUDENT

Jul. 2019 - Aug. 2019

- Learn MAX/MSP in Berkeley CNMAT

NTUEE Student Association Marketing Department

Taipei, Taiwan(R.O.C)

DIRECTOR

Sept. 2020 - Jun. 2021

- Teach Visual Effects lesson and Organize activities

NTUEE Summer Camp

TEACHING DIRECTOR

- Teach 30+ student for basic web crawler knowledge
- Organize activities

Taipei, Taiwan (R.O.C.)

Jul. 2021 - Aug. 2021

NTUEE Podcast Channel

Host

- Compose intro and background music
- Organize podcast rundown for interviewing alumni

Taipei, Taiwan(R.O.C)

Sept. 2020 - Jun. 2021

Invited Talk at Music + AI Reading Group by Mila x Vector

INVITED TALKER

- Present Theme Transformer

QC, Canada

Sept. 2020 - Jun. 2021

Reviewer at ISCSLP

REVIEWER

Singapore

Sept. 2022

Selected Projects

MusicChain [\[Github\]](#)

COURSE FINAL FOR WEB AND MULTIMEDIA

- Integrate smart contract into profit sharing music cover system
- Get cooperation invitation from startup from *Emlyon Business School*
- Won **3rd** prize at Bachelor Thesis Award Electrical Engineering Dept. at NTU

Taipei Taiwan

Jun. 2021

NTUEE LightDance [\[Github\]](#) [\[YouTube\]](#)

SOFTWARE DEVELOPER

- Design front-end RPI control interface
- Devise time synchronize mechanism between RPI and server

Taipei, Taiwan

Jul. 2012

Sensor your music [\[Github\]](#)

MIDTERM PROJECT FOR MUSIC COMPUTING CLASS

- Design an interface to control PureData by smartphones via web browser

Taipei, Taiwan

Sep. 2021

NTUEE Automatic Theremonitor System [\[Github\]](#)

TO COLLECT THE COVID-19 INFECTED TRACE

- Introduced basic procedure for penetration testing and how to use Metasploit

Taipei, Taiwan

Sep. 2012

Midi2tiles [\[Github\]](#)

DEVELOP MUSIC VISUALIZATION PROGRAM

- Develop a program to generate midi tiles from midifiles

Taipei, Taiwan

Nov. 2021

Apache Submarine [\[Github\]](#)

COMMIT TO GITHUB REPO

- Develop CLI system for Submarine User and fix various bugs in front-end
- Total 11 PRs

Taipei, Taiwan

Sep. 2021 - Jan. 2022

Honors & Awards

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|------|---|-----------------|
| 2011 | 2nd Place , World Robot Olympiad (W.R.O) | Hsinchu, Taiwan |
| 2011 | Merit Award , World Robot Olympiad (W.R.O) | Abu Dhabi, UAE |
| 2019 | 2nd Place , Meichu: Hackathon | Hsinchu, Taiwan |
| 2020 | Social Devotion Special Award , at NTU, by the chancellor of NTU, Dr. Chung-Ming Kuan | Taipei, Taiwan |
| 2020 | 2nd Prize , Bachelor Thesis Award Electrical Engineering Dept. at NTU | Taipei, Taiwan |
| 2021 | 3rd Prize , Bachelor Thesis Award Electrical Engineering Dept. at NTU | Taipei, Taiwan |
| 2021 | Most Popular Award , Bachelor Thesis Award Electrical Engineering Dept. at NTU | Taipei, Taiwan |
| 2022 | 1st Prize & Most Popular Award , Bachelor Thesis Award Electrical Engineering Dept. at NTU | Taipei, Taiwan |
| 2022 | Presidential Award , Electrical Engineering Dept. at NTU | Taipei, Taiwan |

Skills

Programming Languages Node.js, Python, PyTorch, C++, LaTeX, Shell
Mandarin, English