# Yi Jen (Ian) Shih
UNDERGRADUATE RESEARCHER

 (+886) 938718759  |   yjshih23@gmail.com  |   atosystem.github.io  |   atosystem  |   yjshih  |   @yijenshih  |   Ian Shih

## 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** last year: **4.26/4.30**
- **Honors**: Presidential 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

[1]  **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]

**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]
    - Won **1st prize** and **Most Popular Award** at Bachelor Thesis Award Electrical Engineering Dept. at NTU
    - Invited talk at MILA x Vector

## Teaching Experience

**Machine Learning Course by Prof. Hung-Yi Lee**                                                             *Taipei, Taiwan*
TEACHING ASSISTANT                                                                                       *Feb. 2020 - Jun. 2020*
- Design homework for phoneme classification

## 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 VFX lesson
- Organize activities

**NTUEE Summer Camp**                                                                                    *Taipei, Taiwan (R.O.C.)*
TEACHING DIRECTOR                                                                                        *Jul. 2021 - Aug. 2021*
- Teach 30+ student for basic web crawler knowledge
- Organize activities

**NTUEE Podcast**                                                                                        *Taipei, Taiwan(R.O.C)*
HOST                                                                                                     *Sept. 2020 - Jun. 2021*
- Write intro and background music
- Organize podcast rundown

**Invited Talk at Music + AI Reading Group by Mila x Vector** *QC, Canada*

Invited talker *Sept. 2020 - Jun. 2021*

- Present Theme Transformer

## Selected Projects

**MusicChain [Github]** *Taipei Taiwan*

Course final for Web and Multimedia *Jun. 2021*

- 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

**NTUEE LightDance [Github] [YouTube]** *Taipei, Taiwan*

Software Developer *Jul. 2012*

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

**Sensor your music [Github]** *Taipei, Taiwan*

Midterm project for Music Computing Class *Sep. 2021*

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

**NTUEE Automatic Theremonitor System [Github]** *Taipei, Taiwan*

To collect the COVID-19 infected trace *Sep. 2012*

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

**Midi2tiles [Github]** *Taipei, Taiwan*

Develop music visualization program *Nov. 2021*

- Develop a program to generate midi tiles from midifiles

**Apache Submarine [Github]** *Taipei, Taiwan*

Commit to github repo *Sep. 2021 - Jan. 2022*

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

## Honors & Awards

| | | |
|---|---|---|
| 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 | **3nd 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** Node.js, Python, C++, LaTeX

**Languages** Mandarin, English