Yung-Sung **Chuang**

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Education

National Taiwan University(NTU)

Taipei, Taiwan

B.S. in Electrical Engineering(Junior), GPA(up to now): **4.17/4.30** *Sep. 2016 - Jun. 2020 (EXPECTED)*

- **Honors:** Dean's List (S '18), Irving T. Ho Memorial Scholarship (F '18)
- **Selected Courses:** Computer Programming 2016 Fall (**A+**), Data Structure and Programming 2017 Fall (**A+**), Machine Learning 2018 Spring (**A+**), Digital Speech Processing 2018 Fall (**A+**), Deep Learning for Computer Vision 2019 Spring (**A+**)

Research Experiences

NTU, Speech Processing & Machine Learning Lab, supervised by Prof. Hung-yi Lee

Taipei, Taiwan

Undergraduate Researcher *Aug. 2018 - PRESENT*

- Research on text style transfer with **CycleGAN architecture** to transfer spoken style language to formal style language. **[Github Link]**
- Research on learning unsupervised vector representations for unlabelled spoken speech signals, with the continuous spoken language model, pursuing **low-source spoken language understanding**.

NTU, Machine Intelligence and Understanding Lab, supervised by Prof. Yun-Nung (Vivian) Chen

Taipei, Taiwan

Undergraduate Researcher *Feb. 2019 - PRESENT*

- Research on Generating Conclusions from Medical RCT Papers. **[Poster Link]**
- Won the 2nd place in **2019 NTU CSIE Undergrad Special Research Exhibition**, and **Appier 1st Prize**.

Academia Sinica, Intelligent Agent Systems Lab, supervised by Prof. Wen-Lian Hsu

Taipei, Taiwan

Research Assistant and Research Intern (for the first 2 month) *Jul. 2018 - Feb. 2019*

- Build a supervised **accurate parsing system** with state-of-the-art deep learning methods such as BiLSTM and ELMo to find collocation pairs given natural language sentences. **[Github Link]**
- Build a fully-unsupervised system to finding collocation pairs in a large corpus with Word2Vec technique, **outperforming the previous research results** from five Ph.D. students of Prof. Hsu. **[Github Link]**

Competitions & Awards

NCTS Health Hackathon 2018

Taipei, Taiwan

1st Place with NT$120,000 (out of 18 teams) | **News Link** | **Cert. Link** *Jun. 2018*

- A hackathon on "**Intelligent Hospital**" organized by *National Center for Theoretical Sciences* and *Mount Sinai Health System, New York*.
- We proposed an improved **system for doctors shifting in hospital** — PRO (Patient Relay Optimizer) to help doctors grasp all info about patients, status, tasks at a glance, reducing the risk of information transfer incomplete between doctors when shifting. **[Github Link]**
- This work also won the **1st place** of **2018 H. Spectrum Demo Day** (out of 21 teams) | **News Link**

MakeNTU 2018

Taipei, Taiwan

Best Tech Award with NT$50,000 & **Microsoft Enterprise Award** (out of 50 teams) | **Photo Link 1** | **Link 2** *Mar. 2018*

- A hackathon focus on the combination of hardware and software, organized by NTU
- We built an automatic machine for picking good coffee beans with deep learning technique, For better coffee quality and human time-saving.
- This work also placed in **top 8** in the finalist of **Microsoft Imagine Cup Taiwan National Final 2018**.

HackNTU 2017

Taipei, Taiwan

1st Place of Department of Transportation with NT$50,000 (out of 100+ teams) | **Photo Link** *Jul. 2017*

- The largest hackathon in Taiwan, organized by NTU.
- We built a **smart bus bell system** for solving the problems of getting on the right bus in the huge and busy city, improving the convenience of bus transportation.
- This work has also been **exhibited on WCIT2017 (World Congress on Information Technology)**, we made a presentation to visitors from all around the world.

Skills

Languages	C++, Python, MATLAB, Shell Scripting
Libraries&Toolkits	Tensorflow, PyTorch, Keras
Others	LaTeX, Git, Linux

Projects

Multi-Source Domain Adaptation Challenge | Poster Link

Course Final Project of "**Deep Learning for Computer Vision**" *Jan. 2019*

- Tried lots of experiments on unsupervised domain adaptation (UDA) for multi-source dataset from ICCV2019 Workshop Challenge.
- Proposed "Fuzzy Adversarial Discriminative Domain Adaptation" and implement "Maximum Classifier Discrepancy" to take this challenge.

Pywordseg: State-of-the-art Chinese Word Segmentation Toolkit | Github | PyPI Link

Course Final Project of "**Digital Speech Processing**" *Jan. 2019*

- An open source state-of-the-art Chinese word segmentation system with BiLSTM and ELMo, helping the downstream Chinese NLP task be more accurate.
- **arXiv preprint:** https://arxiv.org/abs/1901.05816 "*Robust Chinese Word Segmentation with Contextualized Word Representations*".

Chinese word auto-selection for ZhuYin sequence | Github Link

Personal Side Project *Jan. 2019*

- A tiny program that can transfer ZhuYin (Bopomofo) sequence into Chinese word sequence with BiLSTM algorithm and ELMo contextualized ZhuYin vector representation.

Multi-Turn Response Selection | Report Link

Course Final Project of "**Machine Learning**" *Jan. 2018*

- Predicting next utterance of conversations in TV shows with deep learning approaches.

Functionally Reduced And-Inverter Graph | Github Link

Course Final Project of "**Data Structure and Programming**" *Jan. 2018*

- Performing Boolean logic simulations and identify functionally equivalent candidate pairs in the circuit. Reducing the circuit size automatically.

Input Method Auto-Modifier | Github Link

Personal Side Project *Aug. 2017*

- A useful program that can modify your input type between Chinese and English automatically according to the words you type in.

Emotion Recognition with OpenCV | Github Link

Course Final Project of "**Introduction to Computer**" *Jun. 2017*

- A program that can identify emotions of human faces images with OpenCV.

Big Two Game | Github Link

Course Final Project of "**Computer Programming**" *Jan. 2017*

- Human-computer game of the big-two game.
- I designed the main algorithm of the machine agent, and the whole architecture of the game, while the other teammate designed the GUI interface.

Activities

Director of NTUEE plus Department, Student Association of NTUEE *Jun. 2018 - PRESENT*

- Develop a **social media network**, which will link together alumni and undergrad students of NTUEE.
- Host interviews, talks, providing information about the latest technological developments from alumni.
- Pair alumni and undergrads to helping those aspiring to study abroad.

Guest Lecture on Machine Learning 2019 Spring Course *Mar. 2019*

- Introduction to research papers on **Unsupervised Syntactic Parsing** topics.
- Youtube Link: https://www.youtube.com/watch?v=YIuBHB9Ejok

Speaker on MakeNTU 2019 workshop *Mar. 2019*

- Taught to about 100+ people to use Microsoft Azure, OpenCV and Raspberry Pi 3 to build a face recognition locking system.
- Slide Link: https://bit.ly/MakeNTU2019