SHANG-YI CHUANG

kagaminccino.github.io ◇ +886-920-335-066 ◇ sc2357@cornell.edu ◇ www.linkedin.com/in/sychuang/

Seek full-time jobs in **Machine Learning Engineer** and **Data Scientist** in 2022.

EDUCATION

Cornell Tech 2021 – Present
- M.Eng. in **Computer Science**
- Merit-Based Scholarship
- Courses: Algorithms and Data Structures for Applications; Applied Machine Learning; Deep Learning; Natural Language Processing; Data Science in the Wild

National Taiwan University, GPA: 3.86/4.30 2012 – 2017
- B.S., Major in Mechanical Engineering, Minor in Electrical Engineering
- Dean's List Award (Top 5% of the class in GPA)

WORK EXPERIENCE

Research Assistant at Academia Sinica in Taiwan 2018 – 2021
- Improved the applicability of deep learning models on embedded systems with limited processing resources.
- Ported numerous existing systems from Keras, TensorFlow, and MATLAB into Pytorch.
- Reduced processing costs by optimizing codes and cleansing data to Pytorch-friendly formats.
- Addressed multimodal common problems of asynchronous and low-quality devices.
- Published **5 papers** including 1 top-notch IEEE/ACM journal and 4 conferences.
- Supervised crucial environment setups of dataset construction for collaborative labs and schools.
- Took the initiative to be server manager, paper writing mentor, journal reviewer, and internship supervisor.

SKILLS

Programming Language	Python, C, MATLAB, Bash, Visual Basic, SQL
Machine Learning Framework	**PyTorch, Keras, TensorFlow, scikit-learn**
Toolbox	Dlib, OpenCV, FFmpeg, Hugging Face, SoX, Praat, librosa, pandas
Visualization	visdom, Matplotlib, plotly, gnuplot, Inkscape, Visio

PROJECTS

Audio-Visual Multimodal Learning Projects (Pytorch, Keras, TensorFlow, Python, MATLAB, Bash)
- Improved the system robustness against insufficient hardware or inferior sensors in a car-driving scenario.
- Minimized additional multimodal processing costs while addressing privacy problems of facial data.
- Reduced the size of multimodal data to 0.33% without sacrificing the speech enhancement performance.

Self-Supervised Learning on Speech Enhancement (Pytorch, Python, MATLAB, Bash)
- Aimed at realizing speech enhancement without limited intrusive paired data.
- Improved 43% of the speech quality by applying a denoising autoencoder with a linear regression decoder.
- Encouraged the realization of unsupervised deep learning systems.

Cross-Lingual Movie QA System (Pytorch, Python, Bash)
- Focused on reducing the unfavorable inequalities in technology caused by limited data in minority languages.
- Implemented transfer learning with additional English corpus to enhance a Mandarin QA System.
- Achieved zero-shot learning on Mandarin Movie QA tests.

EMA (Electromagnetic Midsagittal Articulography) Projects (Pytorch, Keras, Python, MATLAB, Bash)
- Addressed silent speech for patients with vocal cord disorders or high-noise environments.
- Improved the character correct rate of automatic speech recognition by 30% in speech enhancement tasks.
- Incorporated EMA into speech synthesis systems and achived 83% preferance in a subjective listening test.