SHANG-YI CHUANG

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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-based models on embedded systems.
- Reduced the size of input data to 0.33% without sacrificing the performance of target tasks.
- Addressed asynchronous and low-quality multi-data problems.
- Published **5 papers** including 1 top-notch IEEE/ACM journal and 4 conferences.

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 Projects (Python, MATLAB, Bash, Pytorch, Keras, TensorFlow)
- Confirmed the effectiveness of lip images (compressed and non-compressed) in speech enhancement tasks.
- Addressed privacy problems and additional processing costs with a data compression ratio of 48.
- Improved the robustness of deep-learning-based systems in a car-driving scenario.
- Constructed an open source dataset named Taiwan Mandarin Speech with Video.

Self-Supervised Learning on Speech Enhancement (Python, MATLAB, Bash, Pytorch)
- Improved 43% of the speech quality by applying a denoising autoencoder with a linear regression decoder.
- Required only unlabeled data which encourages the realization of unsupervised deep learning systems.

Cross-Lingual Movie QA System (Python, Bash, Pytorch)
- Implemented transfer learning with additional English corpus to enhance a Mandarin QA System.
- Realized zero-shot learning on Mandarin Movie QA tests.

EMA (Electromagnetic Midsagittal Articulography) Projects (Python, MATLAB, Bash, Pytorch, Keras)
- Verified the effectivess of the articulatory movement features of EMA in speech-related tasks.
- Improved the character correct rate of automatic speech recognition by 30% in speech enhancement tasks and maintained robustness in challenging low SNR conditions.
- Incorporated EMA into speech synthesis systems and achived 83% preferance in a subjective listening test.

Dynamics of Robot Arms (Python, C, Bash)
- Smoothed the velocity profiles and trajectories of robot arms.
- Realized a safer human-robot environment by applying biological statistics results.