

Chi-Liang Liu

MASTER'S STUDENT · NATIONAL TAIWAN UNIVERSITY

Taipei, Taiwan

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Research Interests

External Knowledge and Language Model, Question Answering, Multilingual & Cross-Modal Representation

Education

National Taiwan University (NTU)

Taipei, Taiwan

M.S. in Graduate Institute of Communication Engineering

Sep. 2018 - Jan. 2021

- Advisers: Hung-yi Lee, Lin-shan Lee
- Digital Speech Processing Laboratory

National Taiwan University (NTU)

Taipei, Taiwan

B.S. in Electrical Engineering

Sep. 2015 - Jun. 2018

- Graduated in 3 years. Only 2 out of 185 students.

Publication

PEER-REVIEW CONFERENCE PAPERS

- [1] **Chi-Liang Liu** and Hung-yi Lee. Unsupervised Multiple Choices Question Answering: Start Learning from Basic Knowledge. *EMNLP MRQA Workshop*, 2021.
- [2] **Chi-Liang Liu***, Tsung-Yuan Hsu*, and Hung-yi Lee. Zero-shot Reading Comprehension by Cross-lingual Transfer Learning with Multi-lingual Language Representation Model. *EMNLP/IJCNLP*, 2019.
- [3] Yung-Sung Chuang, **Chi-Liang Liu**, Hung yi Lee, and Lin shan Lee. SpeechBERT: An Audio-and-text Jointly Learned Language Model for End-to-end Spoken Question Answering. *Interspeech*, 2020.
- [4] Chia-Hsuan Li, Szu-Lin Wu, **Chi-Liang Liu**, and Hung-yi Lee. Spoken SQuAD: A Study of Mitigating the Impact of Speech Recognition Errors on Listening Comprehension. *Interspeech*, 2018.

JOURNAL ARTICLES

- [5] Chia-Hsuan Lee, Hung-yi Lee, Szu-Lin Wu, **Chi-Liang Liu**, Wei Fang, Juei-Yang Hsu, and Bo-Hsiang Tseng. Machine comprehension of spoken content: Toefl listening test and spoken squad. *IEEE/ACM Transactions on Audio, Speech, and Language Processing*, 27(9):1469–1480, 2019.

PREPRINTS

- [6] **Chi-Liang Liu**, Hung-yi Lee, and Wen-tau Yih. Structured Prompt Tuning. *arXiv Preprint 2205.12309*, 2022.
- [7] **Chi-Liang Liu***, Tsung-Yuan Hsu*, Yung-Sung Chuang, Chung-Yi Li, and Hung yi Lee. Language Representation in Multilingual BERT and its Applications to Improve Cross-Lingual Generalization. *arXiv Preprint 2010.10041*, 2020.
- [8] **Chi-Liang Liu*** and Tsung-Yuan Hsu* and Yung-Sung Chuang and Hung-yi Lee. What Makes Multilingual BERT Multilingual? *arXiv Preprint 2010.10938*, 2020.
- [9] Chun-Hsing Lin, Alvin Chiang, **Chi-Liang Liu**, Chien-Fu Lin, Po-Hsien Chu, Siang-Ruei Wu, Yi-En Tsai, and Chung-Yang (Ric) Huang. Captain GAN: Navigate Through Embedding Space For Better Text Generation. *OpenReview*, 2018.

Services

Reviewer ACL 2021, EMNLP 2021, 2022, ARR 2021, 2022

Open Source Contributions

huggingface/transformers

contributor

2019-2020

- Span-based Question Answering
- Contributed more than 1000 lines

*equal contribution

Experience

Meta AI

Research Scientist Intern

Seattle, WA
May 2022 - Aug. 2022

- Leverage unpaired text data to improve Multilingual Automatic Speech Recognition.

Appier

Research Scientist Intern

Taipei, Taiwan
Feb. 2022 - Apr. 2022

- Leverage Large Pretrained Language Model to optimize campaign operation.

Amazon Alexa

Applied Scientist Intern

New York, NY
Jul. 2020 - Oct. 2020

- Redesigned Recurrent Neural Network Grammars (RNNG) to general semantic parsing task.
- Empirical comparison the generalization of RNNG and pretrained Seq2Seq model

National Taiwan University, Digital Speech Processing Laboratory

Graduate/Undergraduate Researcher

Taipei, Taiwan
2017 - 2022

- Multilingual Question Answering
- Unsupervised Multiple Choice Question Answering
- Multilingual Representation Research
- Text-Speech jointly Representation Learning
- Maintaining high performance GPU clusters

Research Assistant

Aug. 2021 - Dec. 2022

Master

Jul. 2018 - Jan. 2021

Undergraduate

Sept. 2017 - Jun. 2018

National Taiwan University

Teaching Assistant

Taipei, Taiwan

EE1002

Linear Algebra

2018 FALL, 2019 FALL

CommE5054

Deep Learning for Human Language Processing

2018 FALL

CommE5045

Machine Learning and Having It Deep and Structured

2018 SPRING

CSIE7430

Advanced Deep Learning

2019 SPRING

EE5184

Machine Learning

2017 FALL, 2020 SPRING

EE3035

Web Programming

2018 FALL

Yoctol Info. (Start-up company)

Data Scientist Intern

Taipei, Taiwan
Mar. 2018 - Aug. 2019

- Develop/Deploy NLU system.
- Designed the model for NLU product including preprocessing, model architecture, and infrastructure.

Taiwan's Ministry of the Interior & Ministry of Economic Affairs

Substitute Military Service

Mar. 2021 - Jul. 2021
Taichung, Taiwan

- Giving advice on high performance GPU clusters construction

Honors & Awards

COMPETITION

2019

1st in Formosa Grand Challenge, Ministry of Science and Technology
USD 70,000

Taiwan

SCHOLARSHIP

2019-20

Advanced Speech Technologies Scholarship, National Taiwan University
USD 17,000, 4 students per year for outstanding performance in Speech or NLP related research

Taiwan

2018

Science and Technology Scholarship, CTCI Foundation
USD 5,000, 10 students per year

Taiwan

Professional Talks

CONFERENCE TUTORIALS

Oct 2019 **ROCLING, Tutorial Speaker**, Question Answering

Taipei, Taiwan

INVITED TALKS

Nov 2019 **Ministry of Science and Technology, Invited Speaker**, Question Answering

Taipei, Taiwan

2018-19 **Taiwan AI Academy, Invited Speaker**, Question Answering

Taichung, Taiwan

Jul 2018 **National Taiwan University EE, Tutorial Speaker**, Word Embedding

Taipei, Taiwan