

TING-YUN (CHARLOTTE) CHANG

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RESEARCH INTERESTS

Natural Language Processing; LLM Interpretation; Model Quantization

EDUCATION

University of Southern California, USA

2021 - Present

PhD student in Department of Computer Science

National Taiwan University, Taiwan

2018 - 2020

M.S. in Department of Computer Science and Information Engineering

National Tsing Hua University, Taiwan

2014 - 2018

B.S. in Department of Computer Science

Rank 2/41; GPA 4.14/4.3

Tsinghua University, China

Fall 2015

Exchange Student in Department of Computer Science and Technology

RESEARCH EXPERIENCE

University of Southern California

California, USA

Research Assistant

2021 - Present

- Advisors: Prof. Jesse Thomason and Prof. Robin Jia
- Reducing large language model quantization error (ongoing project)
- Understanding LLMs' (in)consistency to prompts by model decomposition [1]
- Localizing memorized data in LLMs [2]
- Stabilizing in-context learning by understanding the value of demonstrations [3]
- Continual learning for vision-language tasks [4]

Amazon AWS AI

California, USA

Applied Scientist Intern

Summer 2024

- Improving the safety of LLMs against jailbreaking attacks

Academia Sinica

Taipei, Taiwan

Research Assistant

2020 - 2021

- Advisor: Prof. Chi-Jen Lu
- Understanding pre-finetuning of language models [5]
- Compressing large image generators [8]

Amazon Alexa AI

California, USA

Applied Scientist Intern

Spring 2020

- Improving common sense in pretrained language models [6, 7]

National Taiwan University

Taipei, Taiwan

Research Assistant

2018 - 2020

- Advisor: Prof. Yun-Nung (Vivian) Chen

- Probing contextualized word embeddings with the definitions of multisense words [9]
- Clinical notes diagnosis [10]

PUBLICATIONS

- [1] **Ting-Yun Chang**, Jesse Thomason, and Robin Jia. *When Parts Are Greater Than Sums: Individual LLM Components Can Outperform Full Models*. EMNLP 2024.
- [2] **Ting-Yun Chang**, Jesse Thomason, and Robin Jia. *Do Localization Methods Actually Localize Memorized Data in LLMs? A Tale of Two Benchmarks*. NAACL 2024.
- [3] **Ting-Yun Chang** and Robin Jia. *Data Curation Alone Can Stabilize In-context Learning*. ACL 2023.
- [4] Tejas Srinivasan, **Ting-Yun Chang**, Leticia Leonor Pinto Alva, Georgios Chochlakis, Mohammad Rostami, and Jesse Thomason. *CLiMB: A Continual Learning Benchmark for Vision-and-Language Tasks*. NeurIPS Datasets and Benchmarks Track 2022.
- [5] **Ting-Yun Chang** and Chi-Jen Lu. *Rethinking Why Intermediate-Task Fine-Tuning Works*. Findings of EMNLP 2021.
- [6] **Ting-Yun Chang**, Yang Liu, Karthik Gopalakrishnan, Behnam Hedayatnia, Pei Zhou, and Dilek Hakkani-Tur. *Go Beyond Plain Fine-tuning: Improving Pretrained Models for Social Commonsense*. IEEE SLT 2021.
- [7] **Ting-Yun Chang**, Yang Liu, Karthik Gopalakrishnan, Behnam Hedayatnia, Pei Zhou, and Dilek Hakkani-Tur. *Incorporating Commonsense Knowledge Graph in Pretrained Models for Social Commonsense Tasks*. DeeLIO Workshop at EMNLP 2020 (**best paper award**).
- [8] **Ting-Yun Chang** and Chi-Jen Lu. *TinyGAN: Distilling BigGAN for Conditional Image Generation*. Asian Conference on Computer Vision 2020.
- [9] **Ting-Yun Chang** and Yun-Nung Chen. *What Does This Word Mean? Explaining Contextualized Embeddings with Natural Language Definition*. EMNLP-IJCNLP 2019.
- [10] Shang-Chi Tsai, **Ting-Yun Chang**, and Yun-Nung Chen. *Leveraging Hierarchical Category Knowledge for Data-Imbalanced Multi-Label Diagnostic Text Understanding*. LOUHI Workshop at EMNLP-IJCNLP 2019.
- [11] Chao-Chun Liang, Shih-Hong Tsai, **Ting-Yun Chang**, Yi-Chung Lin, and Keh-Yih Su. *A Meaning-based English Math Word Problem Solver with Understanding, Reasoning and Explanation*. COLING 2016: System Demonstrations.

TEACHING EXPERIENCE

Teaching Assistant

USC CS544 Applied Natural Language Processing, Fall 2024. Instructor: Swabha Swayamdipta.
 USC CS 467: Introduction to Machine Learning, Spring 2023. Instructor: Robin Jia.
 NTU CS: Applied Deep Learning, Spring 2019. Instructor: Yun-Nung (Vivian) Chen.

PROGRAMMING

Languages: Python, C/C++, Java

Frameworks: PyTorch, TensorFlow, scikit-learn