

# TAO SHI

Tel: (+86) 159-8931-6450 | Email: [shitao21@mails.tsinghua.edu.cn](mailto:shitao21@mails.tsinghua.edu.cn)

Homepage: <https://taoshi1998.github.io>.

## EDUCATION

**Tsinghua-UC Berkeley Shenzhen Institute (TBSI), Tsinghua University**

Shenzhen, China

*Master of Science in Data Science and Information Technology*

*Sep 2021 - Present*

Cumulative GPA: 3.94/4.00

**China University of Mining and Technology (CUMT)**

Xuzhou, China

*Bachelor of Engineering in Computer Science and Technology*

*Sep 2016 - Jun 2020*

Cumulative GPA: 87.73/100, Ranking: 21/243

**Australian National University**

Canberra, Australia

*Exchange Program at the School of Computing*

*Feb 2018 - Jul 2018*

Cumulative GPA: 6.75/7.00

## RESEARCH INTERESTS

Natural Language Processing, Multimodal Learning, Machine Learning

## PUBLICATIONS

\* indicates equal contribution

**Tao Shi** and Shao-Lun Huang. “MultiEMO: An Attention-Based Correlation-Aware Multimodal Fusion Framework for Emotion Recognition in Conversations”. *ACL 2023*. [\[PDF\]](#) [\[Code\]](#)

**Tao Shi**<sup>\*</sup>, Xiao Liang<sup>\*</sup>, Yaoyuan Liang, Xinyi Tong, and Shao-Lun Huang. “SSLCL: An Efficient Model-Agnostic Supervised Contrastive Learning Framework for Emotion Recognition in Conversations”. *Under Review by AAAI 2024*. [\[ArXiv Preprint\]](#) [\[Code\]](#)

Xiao Liang<sup>\*</sup>, **Tao Shi**<sup>\*</sup>, Yaoyuan Liang, Te Tao, and Shao-Lun Huang. “Exploring Iterative Refinement with Diffusion Models for Video Grounding”. *Under Review by AAAI 2024*.

## RESEARCH EXPERIENCE

**Exploring Iterative Refinement with Diffusion Models for Video Grounding**

May 2023 - Aug 2023

*Advisor: Prof. Shao-Lun Huang*

*Tsinghua University*

- We innovatively formulated video grounding as a conditional generative task using diffusion models, which enabled iterative refinements of predicted spans through the reversed denoising diffusion process.
- A video-centered multimodal encoder was designed to facilitate the interaction between video and sentence features, and a specialized span refining decoder was introduced to effectively generate target spans.

**SSLCL: An Efficient Model-Agnostic Supervised Contrastive Learning Framework for Emotion Recognition in Conversations**

Feb 2023 - Aug 2023

*Advisor: Prof. Shao-Lun Huang*

*Tsinghua University*

- Through a novel utilization of label representations, we effectively addressed the constraints posed by large batch sizes and incompatibility with most existing ERC architectures encountered in current supervised contrastive learning (SCL)-based methods.
- We were the first in the SCL community to leverage Soft-HGR maximum correlation as a measure of similarity.
- We innovatively leveraged multimodal information as data augmentation to enhance model performances.

## MultiEMO: An Attention-Based Correlation-Aware Multimodal Fusion Framework for Emotion Recognition in Conversations

Aug 2022 - Jan 2023

Advisor: Prof. Shao-Lun Huang

Tsinghua University

- We proposed a novel visual feature extraction network named VisExtNet, which effectively captured visual cues of interlocutors without modeling redundant scene information.
- We designed a multimodal fusion model called MultiAttn based on bidirectional multi-head cross-attention layers, which successfully modeled the complicated correlations across textual, audio and visual modalities.
- A sample-weighted focal contrastive (SWFC) loss was introduced to address the difficulty of classifying minority and semantically similar emotion classes.

## AWARDS AND HONORS

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Runner-Up of the 6 <sup>th</sup> TBSI Retreat Poster Competition [Poster], Tsinghua University (top 1%)	Jul 2023
Runner-Up of the 4 <sup>th</sup> Tsinghua SDG Open Hack Competition [Slides], Tsinghua University (top 5%)	Nov 2022
Outstanding Graduate of the Class of 2020, CUMT (top 3%)	Jun 2020
Outstanding Graduate Thesis and Dissertation Award, CUMT (top 1%)	Jun 2020
First Prize in 2019 National English Competition for College Students, Ministry of Education (top 1%)	May 2019
Outstanding Undergraduate International Exchange Scholarship, China Scholarship Council (top 3%)	Nov 2017

## WORK EXPERIENCE

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Teaching Assistant of Seminar in Data Science and Information Technology, Tsinghua University	Spring 2023
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## ACADEMIC SERVICE

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Conference Reviewer at EMNLP 2023	Aug 2023 - Sep 2023
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## ENGLISH PROFICIENCY

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TOEFL: 110, GRE: 333 + 4.0