**Yiming Cheng**

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**EDUCATION**

**Tsinghua University** Department of Electronic Engineering ***Sep.2019-Jul.2024***

Bachelor of Engineering in ***Electronic Engineering(Major)***

***Minor in Statistics ,Minor in Laws***

 ***GPA: 3.28 GPA for Statistic minor:3.49 TOEFL: 106***

**University of Chicago** Department of Computer Science ***Expected:Dec.2025***

***Master in Computer Science(Pre-doc)***

 ***GPA: 3.90***

**PUBLICATIONS**

* Yi Yang,**Yiming Cheng**,Hao Feng,Zhu Han “**Emotion-Aware Scene Adaptation: A Bandwidth-Efficient Approach for Generating Animated Short**”, accepted by MDPI-sensors
* **X Lan, Y Cheng, L Sheng, C Gao, Y Li** “**Depression detection on social media with large language models**”, submitted to The Web Conference 2024 - Web4Good
* Lan, x, Piao, .., **Cheng, Y**, Gao, c, Li, Y, Niu, Y, Song, Y, Gai, K, & Li, Y(2024). Recommendation for Inclusivity of Underrepresented Producers in Usergenerated Content Platforms.submitted to NIPS2024
* Yi Yang, Hao Feng, **Yiming Cheng**, Yitong Ma, Zhu Han, “Minimizing Hallucinations and Communication Cost: Adversarial Debate and Voting Mechanisms in LLM-Based Multi-Agents,” submitted to MDPI
* **Yiming Cheng**, “ Research on Recommendation System Technology Based on Large Language Models,” Graduation Design,Tsinghua University, 2024.
* **Patent**: Yi Yang, **Yiming Cheng**, Hao Feng, et al. “A Semantic Encoding and Decoding Framework for Converting Visual Content into Virtual Animated Visual Representations.”

**RESEARCH & PROJECT EXPERIENCES**

**Future Intelligent Lab(FIBLAB),Tsinghua University** ***Jul.2022—present***

***Research Assistant Advisor: Assistant Prof. ChenGao***

***Recommendation for Inclusivity of Underrepresented Producers in User-generated Content Platform***

*This project was aimed to provide fair recommendations for high-quality, low-attention creators on UGC with GNN.*

* Take the pioneering step to thinking of the inclusivity issue of underrepresented producers in UGC(user-generated content) platform.
* Propose to construct a heterogeneous graph that can enrich the relations of vulnerable populations, and further propose graph neural networks to learn representations based on enriching features from multi-hop neighbors.

***City Socioeconomic Simulator based on Large Language Models***

*This project was aimed to develop a city simulator while integrating a language model-based agent interaction system.*

* Use UE to Build a visual model scene of Beijing (CBD district)
* Use python to write scripts for agents to interface with LLM and design the agents' memory mechanism to do POI recommendation.(POI means point of interest in the city)
* Implement and optimize the recommendation algorithm, with plans for integration into the laboratory's large simulation system and a future submission to SIGKDD.

**Signal Processing Lab,Tsinghua University *Mar.2022—present***

***Research Assistant Advisor: Aso Prof. YiYang***

**Emotion-Aware Scene Adaptation: A Bandwidth-Efficient Approach for Generating Animated Shorts**

*This project aims to recognize and restore emotions in semantic transmission scenarios under low bandwidth constraints*

* Use the PyTorch framework, build an image element and emotion recognition model based on the CLIP model and InceptionV3,and use PAD (Pleasure-Arousal-Dominance) for emotion scoring.
* Enhance the generated semantics using the EmoCap model trained based on PAD scores for emotion style, ultimately achieving higher emotional coherence than the baseline on the received new video frames.

**Wireless Networking, Signal Processing and Security Lab,University of Houston April*.2022—present***

***Research Assistant Advisor: Prof. ZhuHan***

**Scalable AI Generative Content for Vehicular Network Semantic Communication**

* This project aims to establish a large-model-based semantic communication channel and test its accuracy on a vehicular dataset
* Build and test a channel in PyTorch that uses CLIP to convert original images into semantics and then uses Stable Diffusion to restore semantics back into images.

**Lmcache Team Sep.2024-present**

***Open Source Contributor Advisor: Prof. Junchen Jiang***

**Working on open-source project:**

* **LMCache:** The first open-source Knowledge Delivery Network (KDN) that accelerates LLMapplications up to 8x faster, at 8x lower cost.
* **VLLM/production stack:** Scale from single vLLM instance to distributed vLLM deployment withoutchanging any application code.
* Contributed 458 lines of code, ranked No.6

**Internship PROJECTS**

**Beijing Yuanqing Huihong Information Technology Co., Ltd. (Company)**

**Software Engineer *June.2023—Sep.2023***

* Refactor the Sunflower library(he main functions include JSON parsing, MQTT, B-Stack device information parsing, and data transmission encryption) for the company's Internet of Things (IoT) data platform using Go-lang
* Perform functional and performance testing on the refactored Sunflower library.
* Collaborate with hardware interns to debug and ensure successful MQTT-based data transfer of bridge deflection, vibration frequency, and temperature data from LuZhou Bridge to the company's database.

**Beijing Thunisoft Information Technology Co., Ltd.**

**Software Engineer *July.2022—Sep.2022***

* Use Spring Batch to develop a batch job scheduling system supporting complex workflows and dependency management. Scheduled tasks are executed as planned using Cron expression triggers.
* Integrate Quartz scheduler for enhanced flexibility.
* Data integrity and stability are assured with Spring transaction management and JDBC operations.

**OTHERS**

**Social works:**Deputy Minister of Projects Department, Science Association, Department of Electronic Engineering, Tsinghua University

**Computer Skills:** C, C++, SQL server, Python, Java, R, Go, Linux,Matlab, Verilog, k8s etc.