Yang Xu

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🎓 Education

University of California, Santa Barbara   Sept. 2024 – June 2026 (Expected)
*M. S. in **Computer Science***

Shanghai Jiao Tong University (SJTU)   Sept. 2020 – June 2024
*B. Eng. in **Artificial Intelligence (Honor Class)***   **Score:** 90.8/100 **GPA:** 3.92/4.3

⚙ Internship Experiences

Applied Scientist Intern | Amazon Web Services AI Shanghai Lablet   July 2023 – August 2024
NLP Team

- Co-author of **RefChecker** (Title changed to **Knowledge-Centric Hallucination Detection**, EMNLP 2024)
    - **Cultivated strong ability of applying Large Language Models (LLMs) to specific tasks** *during* development & experiment on claim extractor in the project using various kinds of LLMs to check the factuality of claims from LLM responses
    - **Managed data flow in utilizing information retrieved and stored in a database along with the construction and testing of the final module** *during* development of module for online information retrieval in released demo of this project
    - **Demonstrated strong practical ability of frontend UI design & implementation including backend integration** *during* construction of data annotation platform to annotate LLM responses
- Research on Long-context Language Modeling (internal exploration)
    - **Dived deeper and got further understanding into the inner structures and pre-training pipeline of LLMs** *during* participation in the project modeled after AutoCompressor, in which I explored more aggressive compression ratio by making multiple designs and validating their effects, including both compressing contexts into vectors individually and mapping their transition with each other
    - **Practically implemented ideas and checked the results, conducted deliberated experiments and made detailed analysis & explanations** *to find that* the structure worked well on short sequence reconstruction but encountered trouble when using compressed context for prediction
- Efforts in internal development
    - **Assembled full aspects of information and made a comprehensive survey** *in* reporting the comparison between prevalent LLM frameworks
    - **Grasped usage of more kinds of LLMs** *in* prompt engineering to make precise source attribution in claim extraction
    - **Individually carried out and executed research plans** *in* exploring retrieval-based methods of hallucination detection

Teaching Assistant | Zhiyuan College, SJTU   February 2023 – June 2023
*Data Structure (Honor), working with **Prof. Yuquan Chen***

- **Showed strong background knowledge of basic computer science data structures** *to be* distinguished and honored as the Outstanding Teaching Assistant as had devoted considerable time to support the instructor
- **Demonstrated high-level understanding of computer science basics and the ability to organize and teach, together with leadership** *by* two end-of-semester review sessions for the instructor

👥 Selected Research Projects

MULTI: Multimodal Understanding Leaderboard with Text and Images
*Multimodal Group, X-LANCE Lab, SJTU. Advised by **Tenure-track Prof. Lu Chen***

- **Successfully handled big data and grasped the techniques to pre-process them into database** *in* preparation for the unique multimodal problem dataset of cognitive questions for LLMs with a total of 18k, including various types of problems with pictures from Chinese school examination questions
- **Enhanced skills of using API and local deployment of using LLMs** *during* evaluating LLMs' performance by their answers

Project for Singing Voice Conversion Challenge (SVCC) 2023
*Text-to-Speech Group, X-LANCE Lab, SJTU. Advised by **Prof. Kai Yu***

- **Obtained experience of audio processing and voice conversion system construction** *during* the project that adopted Source-Filter HifiGAN as vocoder with PPG features extracted by Whisper (OpenAI) for baseline
- **Adapted to new strategies of solving problems quickly and implement them into practice in time** *in* training models adapted to target speakers based on open-source repository lora-svc and upsample networks, which finally achieved a better similarity MOS score given by English listeners than all baselines

ℹ Skills

- **Programming Languages & Tools:** Python, C++, C#, SQL, Linux, Git, Shell, json, pytorch, huggingface, mongodb, LaTeX
- **Abilities:** Deep Learning, Natural Language Processing, Software development, Database, Audio processing