

Xiangming Gu

Curriculum Vitae

Education

- 8/21–Present **PhD candidate in Computer Science**, *National University of Singapore*, GPA 4.80/5.0.
Advisor: Prof Ye Wang.
- 8/18–6/21 **B.S. in Finance**, *Tsinghua University*.
- 8/17–6/21 **B.E. in Electronic Engineering**, *Tsinghua University*, GPA 3.80/4.0.
- 1/20–5/20 **Exchange in Electrical and Computer Engineering**, *National University of Singapore*, GPA 4.88/5.0.

Industry Experience

- 3/23–Present **Sea AI Lab**, Research Intern, Singapore.
Research Topic: Generative Model and Large Language Model.
Mentor: Dr. Tianyu Pang and Dr. Chao Du.

Research Interests

Trustworthy machine learning for diffusion models and (multimodal) large language models.
Application of machine learning, e.g. multimodal learning, multi-distribution learning (domain adaptation, fairness), to singing/speech techniques.

Preprints

* denotes equal contributions, †denotes correspondence.

Xiangming Gu*, Xiaosen Zheng*, Tianyu Pang*†, Chao Du, Qian Liu, Ye Wang†, Jing Jiang†, Min Lin. Agent Smith: A Single Image Can Jailbreak One Million Multimodal LLM Agents Exponentially Fast. *Preprints*, 2024.

Xiangming Gu, Chao Du†, Tianyu Pang†, Chongxuan Li, Min Lin, Ye Wang†. On Memorization in Diffusion Models. *Preprints*, 2023.

Xiangming Gu, Wei Zeng, Jianan Zhang, Longshen Ou, Ye Wang†. Deep Audio-Visual Singing Voice Transcription based on Self-Supervised Learning Models. *Preprints*, 2023.

Publications

Yixin Wang, Wei Wei, **Xiangming Gu**, Xiaohong Guan, Ye Wang†. Disentangled Adversarial Domain Adaptation for Phonation Mode Detection in Singing and Speech. In *IEEE Transactions on Audio, Speech and Language Processing (TASLP)*, 2023.

Xiangming Gu, Wei Zeng, Ye Wang†. Elucidate Gender Fairness in Singing Voice Transcription. In *ACM International Conference on Multimedia (MM)*, 2023.

Wei Wei*, Hengguan Huang*, **Xiangming Gu**, Hao Wang, Ye Wang†. Unsupervised Mismatch Localization in Cross-Modal Sequential Data with Application to Mispronunciations Localization. In *Transactions on Machine Learning Research (TMLR)*, 2022.

Hengguan Huang†, **Xiangming Gu**, Hao Wang, Chang Xiao, Hongfu Liu, Ye Wang†. Extrapolative Continuous-time Bayesian Neural Network for Fast Training-free Test-time Adaptation. In *Advances in Neural Information Processing Systems (NeurIPS)*, 2022.

Longshen Ou*, **Xiangming Gu***, Ye Wang†. Transfer Learning of wav2vec 2.0 for Automatic Lyric Transcription. In *International Society for Music Information Retrieval Conference (ISMIR)*, 2022.

Xiangming Gu*, Longshen Ou*, Danielle Ong, Ye Wang†. MM-ALT: A Multimodal Automatic Lyric Transcription System. In *ACM International Conference on Multimedia (MM)*, 2022. **Oral, top paper award.**

Youze Xue, Jiansheng Chen†, **Xiangming Gu**, Huimin Ma, Hongbing Ma. Boosting Monocular 3D Human Pose Estimation with Part Aware Attention. In *IEEE Transactions on Image Processing (TIP)*, 2022.

Boyue Zhang, Penghui Yang, **Xiangming Gu**, Hongen Liao†. Laser Endoscopic Manipulator Using Spring-Reinforced Multi-DoF Soft Actuator. In *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, also in *IEEE Robotics and Automation Letter (RA-L)*, 2021.

Teaching

- 1/23- 5/23 CS5242: Neural Networks and Deep Learning, Teaching Assistant, National University of Singapore.
- 8/22-12/22 CS3244: Machine Learning, Teaching Assistant, National University of Singapore.
- 1/22- 5/22 CS4243: Computer Vision and Pattern Recognition, Teaching Assistant, National University of Singapore.

Awards and Scholarships

- 2022 Research Achievement Award, National University of Singapore
- 2022 MM 2022 Top Paper Award, Association for Computing Machinery.
- 2022 MM 2022 Student Travel Grant, Association for Computing Machinery.
- 2021 President's Graduate Fellowship, National University of Singapore.
- 2020 Visiting Undergraduate Student Scholarship, Tsinghua University.
- 2018 Zheng Geru Scholarship, Tsinghua University.

Academic Service

Conference Reviewer: MM 2024, ECCV 2024, IJCAI 2024, ICCV 2023, AISTATS 2021.
Journal Reviewer: TASLP, RA-L.

Technical Skills

Coding: Python, Matlab, Shell, C/C++, HTML, Verilog, Assembly language, \LaTeX , ...
Libraries: PyTorch, Tensorflow, Huggingface, SpeechBrain, ...