Xiangming Gu

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EDUCATION

National University of Singapore — Singapore
- *PhD candidate, Integrative Sciences and Engineering Programme* — *2021/08 – Present*
  Majored in Computer Science, Advisor: Prof. Ye Wang, GPA: 4.80/5.0

Tsinghua University — Beijing, China
- *B.E. in Electronic Engineering, B.S. in Finance, GPA: 3.80/4.0* — *2017/08 – 2021/06*

EXPERIENCE

Sea AI Lab (Shoppee's parent company) — Singapore
Research Intern — *2023/03 – Present*
- ○ **Host**: *Dr. Tianyu Pang and Dr. Chao Du.*
- ○ **Activity**: *Conduct research projects on (i) memorization in diffusion models; (ii) infectious jailbreak on (multimodal) large language models based multi-agent systems; (iii) interpretability and bias of large language models.*

National University of Singapore — Singapore
Exchange Student — *2020/01 – 2020/05*
- ○ **Host**: *Department of Electrical and Computer Engineering*
- ○ **Activity**: *Take undergraduate courses with a GPA of 4.88/5.00.*

RESEARCH INTERESTS

- **Machine Learning**: Fundamental research for generative models, (multimodal) large language models and AI agents.
- **Singing/Speech**: Application of machine learning, e.g. multimodal learning, multi-distribution learning (domain adaptation, fairness), to singing/speech techniques.

RESEARCH (GOOGLE SCHOLAR)

* denotes equal contribution, †denotes correspondence.

1. **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. *International Conference on Machine Learning.* (**ICML**), 2024.

2. **Xiangming Gu**, Chao Du†, Tianyu Pang†, Chongxuan Li, Min Lin, Ye Wang†. On Memorization in Diffusion Models. *arXiv preprint arXiv:2310.02664*, 2023

3. **Xiangming Gu**, Longshen Ou, Wei Zeng, Jianan Zhang, Nicholas Wong, Ye Wang†. Automatic Lyric Transcription and Automatic Music Transcription from Multimodal Singing. *ACM Transactions on Multimedia Computing Communications and Applications* (**TOMM**), 2024.

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

5. **Xiangming Gu***, Longshen Ou*, Danielle Ong, Ye Wang†. MM-ALT: A Multimodal Automatic Lyric Transcription System. *ACM International Conference on Multimedia* (**MM**), 2022. (***Oral, Top Paper Award***)

6. Hengguan Huang†, **Xiangming Gu**, Hao Wang, Chang Xiao, Hongfu Liu, Ye Wang†. Extrapolative Continuous-time Bayesian Neural Network for Predictive Streaming Domain Adaptation. *Conference on Neural Information Processing Systems* (**NeurIPS**), 2022.

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

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

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

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

11. Boyu 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.

HONORS AND AWARDS

- Dean's Graduate Research Excellence Award (School of Computing, National University of Singapore) 2024
- Research Incentive Award (School of Computing, National University of Singapore) 2023
- Research Achievement Award (School of Computing, National University of Singapore) 2022
- MM'22 Top Paper Award (Association for Computing Machinery) 2022
- MM'22 Student Travel Grant (Association for Computing Machinery) 2022
- President's Graduate Fellowship (National University of Singapore) 2021
- Visiting Undergraduate Student Scholarship (Tsinghua University) 2020
- Tsinghua's Friend- Zheng Geru Scholarship (Tsinghua University) 2018

PROFESSIONAL SERVICES

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

TEACHING

Teaching Assistant	National University of Singapore
CS4347/CS5647, Sound and Music Computing	Fall 2024
Teaching Assistant	National University of Singapore
CS6212, Topics in Media	Spring 2024
Teaching Assistant	National University of Singapore
CS5242, Neural Networks and Deep Learning	Spring 2023
Teaching Assistant	National University of Singapore
CS3244: Machine Learning	Fall 2022
Teaching Assistant	National University of Singapore
CS4243: Computer Vision and Pattern Recognition	Spring 2022

TECHNICAL SKILLS

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