

# 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 Modeling.  
Mentor: Dr. Tianyu Pang and Dr. Chao Du.

### Research Interests

Foundmental research in machine learning, e.g. diffusion models and large language models.  
Application of machine learning, e.g. multimodal learning, multi-distribution learning, and trustworthy machine learning, to singing/speech techniques.

### Preprints

- 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.

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.

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## 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.

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## 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.

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## Academic Service

Reviewer: ICCV 2023, AISTATS 2021, RA-L.

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## Technical Skills

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