Meng-Chen (Martin) Lee

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RESEARCH INTERESTS

My research focuses on multi-party conversations in the context of AI and programming, predicting how humans manage turn-taking and gaze direction, and extending these insights to generate realistic conversational gestures.

EDUCATION

Ph.D. in Computer Science, University of Houston (UH) Expected Dec. 2025

- Cumulative GPA: 3.801/4.0
- Courses: Computer Graphics, Machine Learning, Computer Vision, Natural Language Processing, Statistics
- Teaching Assistant: Database, Computer Graphics, and Data Structure

B.S. in Biomedical Engineering, National Cheng Kung University (NCKU) Aug. 2019

- Overall GPA: 3.45/4.3, Upper-division GPA: 3.65/4.3
- Courses: Operating System, Algorithm, Data Structure, Linear Algebra, Introduction to Computer Graphics

SKILLS

Research: Multimodal, Computer Graphics, Deep Learning, NLP, Computer Vision
Programming Languages: C/C++, Python, MATLAB
Tools: Pytorch, Anaconda, OpenGL, Visual Studio, Vicon, Git, Blender, MotionBuilder

PUBLICATIONS

[ICMI'25] **Lee, M.C.**, & Deng, Z. **Enhancing Gaze Prediction in Multi-Party Conversations via Speaker-Aware Multimodal Adaptation.** *Proceedings of the 27th International Conference on Multimodal Interaction (pp. 57-65), Oct. 2025.*

[ICMI'25] **Lee, M.C.**, & Deng, Z. **Learning Multimodal Motion Cues for Online End-of-Turn Prediction in Multi-Party Dialogue.** *Proceedings of the 27th International Conference on Multimodal Interaction (pp. 57-65), Oct. 2025.*

[ICMI'24] **Lee, M.C.**, & Deng, Z. **Online Multimodal End-of-Turn Prediction for Three-party Conversations.** *Proceedings of the 26th International Conference on Multimodal Interaction (pp. 57-65), Nov. 2024.*
Best Paper Runner-up Award

[IVA'24] **Lee, M.C.**, Li, W. A., & Deng, Z. **A Computational Study on Sentence-based Next Speaker Prediction in Multiparty Conversations.** *Proceedings of the 24th ACM International Conference on Intelligent Virtual Agents (pp. 1-4), Sep. 2024.*

[ICMI'23] **Lee, M.C.**, Trinh, M., & Deng, Z. **Multimodal turn analysis and prediction for multi-party conversations.** *Proceedings of the 25th International Conference on Multimodal Interaction (pp. 436-444), Oct. 2023.*

RESEARCH EXPERIENCE

Research Assistant at UH CGIM Aug. 2020 - Present

- Built large-scale 3D multimodal datasets (speech, motion, gaze) for multi-party conversation modeling.
- Developed real-time end-of-turn prediction with PLM-GRU with gesture cues.
- Designed DialogueDiffu, a diffusion-based dyadic gesture synthesis framework combining contrastive multimodal pretraining with latent motion modeling to generate semantically aligned co-speech gestures (TOG submission).
- Proposed speaker-aware gaze prediction models using cross-modal transformers and contextual embeddings.

Research Assistant at NCKU MDIC Jan. 2020 - Jun. 2020

- Created a user-friendly mobile app for epilepsy detection, enabling convenient access for patients and doctors.

PROFFESIONAL EXPERIENCE

Research Intern, Microsoft May. 2025 - Aug. 2025

- Designed and implemented a voice-based conversational agent that leverages interruption and back-channeling to create more natural and engaging user experiences.

Co-op, Brain Navi Biotechnology Co., Ltd. Sep. 2017 - Jan. 2018

- Built an advanced application utilizing depth camera technology to achieve real-time and accurate brain location and orientation tracking, ensuring seamless brain insertion surgeries.

SELECTED PROJECTS

Face Detection in Large distance (FaDiLD) Jan. 2023 - May 2023

- Enhanced YOLOv8 with transformer layers, achieving detection accuracies of 93.74%, 91.63%, and 76.21% on WiderFace benchmarks.

Detecting Minimal Semantic Units and their Meanings (DiMSUM) Jan. 2023 - May 2023

- Finetuned BERT model for Multiword Expression (MWE) and Supersence prediction.

SERVICE AND LEADERSHIP

Reviwer, IEEE Transactions on Visualization and Computer Graphics (TVCG) 2025
Reviwer, IEEE Transactions on Visualization and Computer Graphics (TVCG) 2024
President of University of Houston Taiwanese Student Association (UHTSA) 2021

AWARDS

Best Paper Runner-up Award - ICMI 2024 Nov. 2024
Best Paper Award - UH Computer Science Ph.D. Research Showcase Mar. & Oct. 2024

TEACHING EXPERIENCE

TA, COSC 6372: Computer Graphics Fall 2021, Spring 2022, Spring 2023, Fall 2023, Spring 2024, Fall 2024, Spring 2025
TA, COSC 2430: Programming and Data Structures Summer 2022
TA, COSC 3380: Database Systems Spring 2021
Special Project Teacher, Tainan Bilingual International Education Association Mar. 2017 - Jun. 2017

- Developed an engaging programming course tailored for third-grade elementary school students and introduced fundamentals of coding through hands-on experience of controlling robots with *SNAP!*.