

- **Finally**, the dissertation introduces Ada2I and SPCL to address modality imbalance and heterogeneous learning difficulty, where Ada2I performs dynamic balancing via Adaptive Feature Weighting (AFW) and Adaptive Modality Weighting (AMW), and SPCL serves as a lightweight plug-and-play module that guides models to learn from easy to hard samples at both utterance and dialogue levels, thereby improving training stability in complex emotional scenarios.

All proposed models are rigorously evaluated through standardized experiments and comparisons with strong baselines, demonstrating significant improvements in performance, reliability and robustness of deep multimodal models for conversational emotion recognition, especially under realistic conditions with incomplete and imbalanced modalities.

List of scientific publications related to the dissertation:

1. **Cam Van Thi Nguyen**, Tuan Mai, Son The, Dang Kieu, and Duc-Trong Le. 2023. “Conversation Understanding using Relational Temporal Graph Neural Networks with Auxiliary Cross-Modality Interaction”. In *Proceedings of the 2023 Conference on Empirical Methods in Natural Language Processing*, pages 15154–15167, Singapore. Association for Computational Linguistics <https://doi.org/10.18653/v1/2023.emnlp-main.937> (Scopus, CORE Rank A* Conference)
2. **Cam-Van Thi Nguyen**, Cao-Bach Nguyen, Duc-Trong Le, and Quang-Thuy Ha. 2024. “Curriculum Learning Meets Directed Acyclic Graph for Multimodal Emotion Recognition”. In *Proceedings of the 2024 Joint International Conference on Computational Linguistics, Language Resources and Evaluation (LREC-COLING 2024)*, pages 4259–4265, Torino, Italia. ELRA and ICCL. <https://aclanthology.org/2024.lrec-main.380/> (Scopus, CORE Rank B Conference).
3. **Cam-Van Thi Nguyen**, The-Son Le, Anh-Tuan Mai, and Duc-Trong Le. 2024. “Ada2I: Enhancing Modality Balance for Multimodal Conversational Emotion Recognition”. In *Proceedings of the 32nd ACM International Conference on Multimedia (MM '24)*. Association for Computing Machinery, New York, NY, USA, 9330–9339. <https://doi.org/10.1145/3664647.3681648> (Scopus, CORE Rank A* Conference)
4. **Cam-Van Thi Nguyen**, Hai-Dang Kieu, Quang-Thuy Ha, Xuan-Hieu Phan, Duc-Trong Le. “Mi-CGA: Cross-modal Graph Attention Network for robust emotion recognition in the presence of incomplete modalities”, *Neurocomputing*, Volume 623, 2025, 129342, ISSN 0925-2312. <https://doi.org/10.1016/j.neucom.2025.129342> (SCIE Q1 Journal, Impact Factor: 6.5)
5. **Phuong-Anh Nguyen**, The-Son Le, Duc-Trong Le, **Cam-Van Thi Nguyen***. 2026. “Leveraging Self-Paced Curriculum Learning for Enhanced Modality Balance in Multimodal Conversational Emotion Recognition.” *Neural Computing and Applications* <https://doi.org/10.1007/s00521-026-12160-6> (Scopus Q1 Journal, in press)

Hanoi, / /2026

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