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Homepage

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Google Scholar

Education

- **King Abdullah University of Science and Technology (KAUST)** Thuwal, Saudi Arabia
  Ph.D. student in Computer Science *2025 -*
  - Supervisor: Prof. Bernard Ghanem
  - Research Interests: Human-centric Analysis & Generative Model & Multi-agent System & Human-computer Interactions
- **Shenzhen University** Shenzhen, China
  M.S. in Computer Science *2020 - 2023*
  - GPA: 87/100 (Ranking: 6/76)
  - Supervisor: Assoc. Prof. Weicheng Xie and Prof. Linlin Shen
  - Research Interests: Human-centric Analysis & Generative Model
- **Guangzhou University** Guangzhou, China
  B.S. in Computer Science *2016 - 2020*
  - GPA: 88/100 (Ranking: 3/101)

Selected Publications

** denotes equal contribution*

1. **Luo, C.**, Wang, J., Li, B., Song, S., & Ghanem, B. (2025). OmniResponse: Online Multimodal Conversational Response Generation in Dyadic Interactions. In the Annual Conference on Neural Information Processing Systems (**NeurIPS 2025**) [pdf].
2. He, X.*, **Luo, C.***, Xian, X., Li, B., Song, S., Khan, M.H., Xie, W., Shen, L. and Ge, Z., (2025). SynFER: Towards Boosting Facial Expression Recognition with Synthetic Data. In Proceedings of the IEEE/CVF International Conference on Computer Vision (**ICCV 2025)**.
3. **Luo, C.**, Song, S., Yan, S., Yu, Z., & Ge, Z. (2025). ReactDiff: Fundamental Multiple Appropriate Facial Reaction Diffusion Model. ACM Multimedia 2025 (**ACM MM 2025**).
4. **Luo, C.**, Song, S., Xie, W., Spitale, M., Shen, L., & Gunes, H. (2024). ReactFace: Multiple Appropriate Facial Reaction Generation in Dyadic Interactions. **IEEE Transactions on Visualization and Computer Graphics**. [pdf].
5. Lin, Q.*, **Luo, C.***, Niu, Z., He, X., et al., (2024). Boosting Adversarial Transferability across Model Genus by Deformation-Constrained Warping. In AAAI Conference on Artificial Intelligence (**AAAI 2024**). [pdf].
6. **Luo, C.***, Lin, Q.*, Xie, W., Wu, B., Xie, J., & Shen, L. (2022). Frequency-driven Imperceptible Adversarial Attack on Semantic Similarity. In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR 2022)** [pdf].

7. **Luo, C.***, Song, S.*, Xie, W., Shen, L., & Gunes, H. (2022). Learning Multi-dimensional Edge Feature-based AU Relation Graph for Facial Action Unit Recognition. In Proceedings of the International Conference on International Joint Conferences on Artificial Intelligence (**IJCAI 2022**) [pdf].

8. Song, S.*, Spitale, M.*, **Luo, C.***, Palmero, C., Barquero, G., Zhu, H., ... & Gunes, H. (2024). REACT 2024: the second Multi-modal Multiple Appropriate Facial Reaction Generation Challenge. In the International Conference on Automatic Face and Gesture Recognition (FG). [pdf].

9. He, X., **Luo, C.**, Lin, Q., Xie, W., Khan, M. H., Song, S., & Shen, L. (2025). Towards Robust Training via Gradient-Diversified Backpropagation. In IEEE/CVF Winter Conference on Applications of Computer Vision (**WACV 2025**).

10. Wang, Z., Song, S., **Luo, C.**, Deng, S., Xie, W., & Shen, L. (2024). Multi-scale Dynamic and Hierarchical Relationship Modeling for Facial Action Units Recognition. In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR 2024)**.

11. He, X., Hu, J., Lin, Q., **Luo, C.**, Xie, W., Song, S., ... & Shen, L. (2024). Towards Combating Frequency Simplicity-biased Learning for Domain Generalization. In the Annual Conference on Neural Information Processing Systems (**NeurIPS 2024**).

12. Song, S., Spitale, M., **Luo, C.**, Barquero, G., Palmero, C., Escalera, S., ... & Gunes, H. (2023). REACT2023: the first Multi-modal Multiple Appropriate Facial Reaction Generation Challenge. ACM Multimedia 2023.[pdf].

13. Hou, Y., Song, S., **Luo, C.**, Mitchell A., Ren, Q., Xie, W., Kang, J., Wang, W., & Botteldooren D.Joint Prediction of Audio Event and Annoyance Rating in an Urban Soundscape by Hierarchical Graph Representation Learning. INTERSPEECH 2023.

14. He, X.,Lin, Q., **Luo, C.**, Song, S., Xie, W., Liu, F., & Shen, L. (2023). Shift from Texture-bias to Shape-bias: Edge Deformation-based Augmentation for Robust Object Recognition. In Proceedings of the IEEE/CVF International Conference on Computer Vision (**ICCV 2023)** [pdf].

15. Wang, Z., Song, S., **Luo, C.**, Zhou, Y., Wu, S., Xie, W., & Shen, L.(2023). Spatial-Temporal Graph-Based AU Relationship Learning for Facial Action Unit Detection. In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops (**CVPR 2023 Workshops)** [pdf].

16. Xie, J., **Luo, C.**, Zhu, X., Jin, Z., Lu, W., & Shen, L. (2021). Online Refinement of Low-level Feature Based Activation Map for Weakly Supervised Object Localization. In Proceedings of the IEEE/CVF International Conference on Computer Vision (**ICCV 2021)** [pdf].

Awards, Grants & Honors

CVPR NTIRE 2024 Challenge on Short-form UGC Video Quality Assessment, Second Place 2024
CVPR Affective Behavior Analysis in-the-wild Competition, Fourth Place 2023
China National Scholarship $\leq$ 0.02% 2022
Excellent Academic Scholarship, First Prize 2022
Excellent Academic Scholarship, Special Prize 2021
Excellent Academic Scholarship, First Prize 2020
Excellent Academic Scholarship, First Prize 2019
"Lanqiao" Programming Competition in Guangdong Province, First Prize 2019
Excellent Academic Scholarship, Second Prize 2018

Research Experience

- **IVUL Lab** **KAUST**
  Supervised by Prof. Bernard Ghanem *Nov. 2023 - Present*
  - **Topic : Multi-model Generative Model**. My research revolves around designing generative models that can produce multi-model outputs, including video, audio, and text.

- **Affective Intelligence & Robotics Lab** **University of Cambridge**
  Supervised by Prof. Hatice Gunes *Jul., 2022 - Dec., 2022*
  - **Topic: Facial Reaction Generation in Dyadic Interactions.** We're trying to construct a new visual field of generating a listener's facial reactions in dyadic interactions and organzied a grand challenge on ACM MM conference.

- **Computer Vision Technology (VIS)** **Baidu, Inc.**
  Supervised by Dr. Hang Zhou *Oct., 2022 - Jun., 2023*
  - **Topic: 3D Morphable Model.** We're trying to design a 3D Morphable Model (3DMM) to accurately capture expressions of a facial display and retarget them to a virtual 3D avatar.

Computer Vision Institute **Shenzhen Univeristy**
Supervised by Prof. Weicheng Xie and Prof. Linlin Shen *Sep. 2020 - Jun. 2023*
- **Topic: Human Behavior Analysis.** We focus on using GNN to model the complex relationship between facial action units. A multi-dimensional edge feature-based graph is proposed, which is different from conventional single value edge-based graphs. This special graph can automatically learn unique edge features to define the comprehensive relationship between each AU pair.

Participation in Conferences and Programs

- **IJCAI 2022** Virtual Conference
  International Joint Conference on Artificial Intelligence *Jul. 23-29, 2022*
- **CVPR 2022** Virtual Conference
  Computer Vision and Pattern Recognition *Jun. 21-24, 2022*
- **Robotic Design and AI Program** Seattle America
  International Program Held by University of Washington *Jul. 22-31, 2019*

Skills

- Programming languages: C/C++, Python, CUDA, Assembly Language, HTML/CSS, JavaScript
- Library/Toolkit: PyTorch, OpenCV
- Tools: Vim, Latex, Photoshop, Premiere

Academic Activity

- Conference Reviewer: AAAI'2026, ACM MM'2025, NeurIPS'2025, ICCV'2025, CVPR'2025, NeurIPS'2024, ECCV'2024. CVPR'2024, ICASSP'2024, ACCV'2024, CVPR'2023, ICCV'2023, ICASSP'2023, ECCV'2022
- Journal Reviewer: Information Fusion, IEEE Transcations on Affective Computing