Jiequan Cui

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🌐 https://jiequancui.github.io

Educations

- The Chinese University of Hong Kong (CUHK)   **Shatin, Hong Kong SAR**
  Ph.D. in Computer Science & Engineering   2018 - 2022

- ShanDong University   **Jinnan, ShanDong**
  B.E. in Computer Science   2014 - 2018
  - **Ranking:** 1/141 (first 3 years)

Work Experiences

Full Professor   2025.05 - Now
Hefei University of Technology (HFUT)   **Hefei, China**
Research Fellow   2023.05 - 2025.04
Nanyang Technological University (NTU)   **Singapore**

Research Interest

- Data-centric AI plays a crucial role in advancing towards Artificial General Intelligence (AGI). My research focuses on developing novel algorithms and theoretical foundations such as contrastive learning and generative learning to more effectively leverage data for enhancing model generalization and robustness.

- In addition, my team actively explores multi-modal alignment and robustness in large models, including LLMs and VLMs. Our work addresses critical challenges such as jailbreak attacks, adversarial robustness, and hallucination mitigation.

- I am also broadly interested in emerging machine learning topics, including AI for science and 3D modeling, and always enthusiastic about tackling new challenges in these domains.

Awards

IEEE TPAMI 2024 Reviewer Certificate   2025
CVPR Outstanding Reviewer   2025
Postgraduate studentships at CUHK   2018
Excellent graduate in Shandong Province of China   2018
One silver medal and one bronze medal for ACM-CCPC   2016
One bronze medal for ACM-ICPC   2016
National Scholarship, Ministry of Education   2016 & 2015

Academic Services

Reviewer for Journals:
IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI).
International Journal of Computer Vision (IJCV).
IEEE Transactions on Image Processing (TIP).
IEEE Transactions on Neural Networks and Learning Systems (TNNLS).

Reviewer for Conferences:
IEEE Conference on Computer Vision and Pattern Recognition (CVPR).
IEEE International Conference on Computer Vision (ICCV).
European Conference on Computer Vision (ECCV).
International Conference on Learning Representations (ICLR).
Neural Information Processing Systems (NeurIPS).
International Conference on Machine Learning(ICML).

Selected Publications (Google Scholar)

* represents equal contribution.

1. Decoupled Kullback-Leibler Divergence Loss.
Jiequan Cui, Zhuotao Tian, Zhisheng Zhong, Xiaojuan Qi, Bei Yu, Hanwang Zhang.
Conference on Neural Information Processing Systems (**NeurIPS**), 2024.
2. Classes Are Not Equal: An Empirical Study on Image Recognition Fairness.
Jiequan Cui, Beier Zhu, Xin Wen, Xiaojuan Qi, Bei Yu, Hanwang Zhang.
IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2024.
3. Generalized Parametric Contrastive Learning.
Jiequan Cui, Zhisheng Zhong, Zhuotao Tian, Shu Liu, Bei Yu, Jiaya Jia.
IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), 2023.
4. ResLT: Residual Learning for Long-tailed Recognition.
Jiequan Cui, Shu Liu, Zhuotao Tian, Zhisheng Zhong, Jiaya Jia.
IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), 2022.
5. Parametric Contrastive Learning.
Jiequan Cui, Zhisheng Zhong, Shu Liu, Bei Yu, Jiaya Jia.
IEEE International Conference on Computer Vision (**ICCV**), 2021
6. Learnable Boundary Guided Adversarial Training.
Jiequan Cui, Shu Liu, Liwei Wang, Jiaya Jia.
IEEE International Conference on Computer Vision (**ICCV**), 2021

Full Publications (Google Scholar)

* represents equal contribution.

21. Object Fusion via Diffusion Time-step for Customized Image Editing with Single Example
Xue Song, Zhongqi Yue, **Jiequan Cui**, Hanwang Zhang, JingJing Chen.
AAAI Conference on Artificial Intelligence (**AAAI**), 2026.
20. NeuSpring: Neural Spring Fields for Reconstruction and Simulation of Deformable Objects from Videos
Qingshan Xu, Jiao Liu, Shangshu Yu, Yuxuan Wang, Yuan Zhou, Junbao Zhou, **Jiequan Cui**, Yew-Soon Ong, Hanwang Zhang
AAAI Conference on Artificial Intelligence (**AAAI**), 2026.
19. Pushing Rendering Boundaries: Hard Gaussian Splatting.
Qingshan Xu, **Jiequan Cui**, Xuanyu Yi, Yuxuan Wang, Yuan Zhou, Yew-Soon Ong, Hanwang Zhang
AAAI Conference on Artificial Intelligence (**AAAI**), 2026.
18. Learnable Feature Patches and Vectors for Boosting Low-light Image Enhancement without External Knowledge.
Xiaogang Xu, Jiafei Wu, Qingsen Yan, **Jiequan Cui**, Richang Hong, Bei Yu.
IEEE International Conference on Computer Vision (**ICCV**), 2025
17. Aligned Contrastive Loss for Long-Tailed Recognition.
Jiali Ma, **Jiequan Cui**, Maeno Kazuki, Lakshmi Subramanian, Karlekar Jayashree, Sugiri Pranata, Hanwang Zhang.
IEEE Conference on Computer Vision and Pattern Recognition (**CVPR workshop**), 2025.
16. CARE Transformer: Mobile-Friendly Linear Visual Transformer via Decoupled Dual Interaction.
Yuan Zhou, Qingshan Xu, **Jiequan Cui**, Junbao Zhou, Jing Zhang, Richang Hong, Hanwang Zhang.
IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2025.
15. Project-Probe-Aggregate: Efficient Fine-Tuning for Group Robustness.
Beier Zhu, **Jiequan Cui**, Hanwang Zhang, Chi Zhang.
IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2025.

14. Decoupled Kullback-Leibler Divergence Loss.
Jiequan Cui, Zhuotao Tian, Zhisheng Zhong, Xiaojuan Qi, Bei Yu, Hanwang Zhang.
Conference on Neural Information Processing Systems (**NeurIPS**), 2024.

13. Robust Fine-tuning of Zero-shot Models via Variance Reduction.
Beier Zhu, **Jiequan Cui**, Hanwang Zhang.
Conference on Neural Information Processing Systems (**NeurIPS**), 2024.

12. Typicalness-Aware Learning for Failure Detection.
Yijun Liu, **Jiequan Cui**, Zhuotao Tian, Senqiao Yang, Qingdong He, Xiaoling Wang, Jingyong Su.
Conference on Neural Information Processing Systems (**NeurIPS**), 2024.

11. Instruction Tuning-free Visual Token Complement for Multimodal LLMs.
Dongsheng Wang, **Jiequan Cui**, Miaoge Li, Wang Lin, Bo Chen, Hanwang Zhang.
European Conference on Computer Vision (**ECCV**), 2024.

10. Classes Are Not Equal: An Empirical Study on Image Recognition Fairness.
Jiequan Cui, Beier Zhu, Xin Wen, Xiaojuan Qi, Bei Yu, Hanwang Zhang.
IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2024.

9. Doubly Abductive Counterfactual Inference for Text-based Image Editing.
Xue Song, **Jiequan Cui**, Hanwang Zhang, Jingjing Chen, Richang Hong, Yugang Jiang.
IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2024.

8. Learning Context-aware Classifier for Semantic Segmentation.
Zhuotao Tian, **Jiequan Cui**, Li Jiang, Xiaojuan Qi, Xin Lai, Yixin Chen, Shu Liu, Bei Yu, Jiaya Jia.
AAAI Conference on Artificial Intelligence (**AAAI**), 2023.

7. Generalized Parametric Contrastive Learning.
Jiequan Cui, Zhisheng Zhong, Zhuotao Tian, Shu Liu, Bei Yu, Jiaya Jia.
IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), 2023.

6. Understanding Imbalanced Semantic Segmentation Through Neural Collapse.
Zhisheng Zhong*, **Jiequan Cui***, Yibo Yang*, Xiaoyang Wu, Xiaojuan Qi, Xiangyu Zhang, Jiaya Jia.
IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2023.

5. ResLT: Residual Learning for Long-tailed Recognition.
Jiequan Cui, Shu Liu, Zhuotao Tian, Zhisheng Zhong, Jiaya Jia.
IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), 2022.

4. Parametric Contrastive Learning.
Jiequan Cui, Zhisheng Zhong, Shu Liu, Bei Yu, Jiaya Jia.
IEEE International Conference on Computer Vision (**ICCV**), 2021

3. Improving Calibration for Long-Tailed Recognition.
Zhisheng Zhong, **Jiequan Cui**, Shu Liu, Jiaya Jia.
IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2021.

2. Learnable Boundary Guided Adversarial Training.
Jiequan Cui, Shu Liu, Liwei Wang, Jiaya Jia.
IEEE International Conference on Computer Vision (**ICCV**), 2021

1. Fast and Practical Neural Architecture Search.
Jiequan Cui*, Pengguang Chen*, Ruiyu Li, Shu Liu, Xiaoyong Shen, Jiaya Jia.
IEEE International Conference on Computer Vision (**ICCV**), 2019