Beier Zhu

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Abbreviation

NTU	Nanyang Technological University	MM	ACM International Conference on Multimedia
THU	Tsinghua University	ICCV	IEEE International Conference on Computer Vision
USTC	University of Science and Technology of China	AAAI	AAAI Conference on Artificial Intelligence
CVPR	Conference on Computer Vision and Pattern Recognition	TIP	IEEE Transactions on Image Processing
NeurIPS	Conference on Neural Information Processing Systems	EE	Electrical Engineering
TSG	IEEE Transactions on Smart Grid		

Research Interests

Theory: I develop robust learning algorithms, with a focus on long-tailed learning, group robustness, OOD generalization.

Application: My work explores the understanding and application of large multimodal models, including MLLMs, VLMs, and Stable Diffusion, for solving downstream tasks.

Working Experience

Research Scientist, NTU, Singapore   Mar 2025 – Present
  work with Prof. Hanwang Zhang

Researcher, SenseTime, Beijing   Jul 2019 – Nov 2020

Education

P.h.D in Computer Science, NTU, Singapore   Jan 2021 – Jan 2025
  supervisor: Prof. Hanwang Zhang

M.S. in EE, THU, Beijing.   Sep 2016 – Jul 2019

B.E. in EE, THU, Beijing.   Sep 2012 – Jul 2016

Selected Publications

Listed in chronological order.   *: equal contribution.   †: corresponding author.

First-Authored Publications

1. Adaptive stochastic coefficients for accelerating diffusion sampling.
   R. Wang, **B. Zhu***, J. Li, L. Yuan, C. Zhang*
   NeurIPS 2025.

2. Distilling parallel gradients for fast ODE solvers of diffusion models.
   B. Zhu, R. Wang*, T. Zhao, H. Zhang, C. Zhang*
   ICCV 2025.

3. Project-probe-aggregate: efficient fine-tuning for group robustness.
   ***B. Zhu**, J. Cui, H. Zhang, C. Zhang*
   Highlight, **CVPR** 2025.

4. Robust fine-tuning of zero-shot models via variance reduction.
   ***B. Zhu**, J. Cui, H. Zhang*
   NeurIPS 2024.

5. Enhancing zero-shot vision models by label-free prompt distribution learning and bias correcting.
   X. Zhu, **B. Zhu***, Y. Tan, S. Wang, Y. Hao, H. Zhang*
   Spotlight, **NeurIPS** 2024.

6. Selective vision-Language subspace projection for few-shot CLIP.
   X. Zhu, **B. Zhu***, Y. Tan, S. Wang, Y. Hao, H. Zhang*
   Oral, **MM** 2024.

7. Generalized logit adjustment: calibrating fine-tuned models by removing label bias in foundation models.
   ***B. Zhu**, K. Tang, Q. Sun and H. Zhang*
   NeurIPS 2023.

8. Prompt-aligned gradient for prompt tuning.
   ***B. Zhu**, Y. Niu, Y. Han, Y. Wu and H. Zhang*
   ICCV 2023.

9. Debiased fine-tuning for vision-language models by prompt regularization.
   ***B. Zhu**, Y. Niu, S. Lee, M. Hur, H. Zhang*
   Oral, **AAAI** 2023.

10. Cross-domain empirical risk minimization for unbiased long-tailed classification.
    ***B. Zhu**, Y. Niu, X. Hua and H. Zhang*
    Oral, **AAAI** 2022.

11. Polygonal region detection.
    ***Beier Zhu**, Rui Zhang.*
    US patent 2022.

12. Structure-coherent deep feature learning for robust face alignment.
C. Lin, **B. Zhu***, Q. Wang, R. Liao, C. Qian, J. Lu and J. Zhou*
TIP 2021.

Corresponding-Authored Publications

13. DEPO: Dual-efficiency preference optimization for LLM agents.
*S. Chen, M. Zhao, L. Xu, Y. Zhao, †**B. Zhu**, H. Zhang, S. Zhao, C. Lu*
AAAI 2026.

14. Benchmarking and bridging emotion conflicts for multimodal emotion reasoning.
*Z. Han, †**B. Zhu**, Y. Xu, P. Song, X. Yang*
Oral, **MM** 2025.

15. Unsupervised visual chain-of-thought reasoning via preference optimization
*K. Zhao, †**B. Zhu**, Q. Sun, H. Zhang*
ICCV 2025.

16. Fault location for radial distribution network via topology and reclosure-generating traveling waves.
*S. Shi, †**B. Zhu**, A. Lei and X. Dong*
TSG 2019.

17. Fault classification for transmission lines based on group sparse representation.
*S. Shi, †**B. Zhu**, S. Mirsaeidi and X. Dong*
TSG 2018.

Others

18. Hierarchical semantic alignment for image clustering.
*X. Zhu, **B. Zhu**, Y. Li, J. Fang, S. Wang, K. Zhao, H. Zhang*
AAAI 2026.

19. Enhancing CLIP robustness via cross-modality alignment.
*X. Zhu, **B. Zhu**, S. Wang, K. Zhao, H. Zhang*
Spotlight, **NeurIPS** 2025.

20. Dynamic multimodal prototype learning in vision-language models.
*X. Zhu, S. Wang, **B. Zhu**, M. Li, Y. Li, J. Fang, Z. Wang, D. Wang, H. Zhang*
ICCV 2025.

21. Devils in middle layers of large vision-language models: interpreting, detecting and mitigating object hallucinations via attention lens.
*Z. Jiang, J. Chen, **B. Zhu**, T. Luo, Y. Shen, X. Yang*
CVPR 2025.

22. Stylestudio: text-driven style transfer with selective control of style elements
*M. Lei, X. Song, **B. Zhu**, H. Wang, C. Zhang*
CVPR 2025

23. Classes are not equal: an empirical study on image recognition fairness.
*J. Cui, **B. Zhu**, X. Wen, X. Qi, B. Yu, H. Zhang*
CVPR 2024

24. Leveraging modality-specific representations for audio-visual speech recognition via reinforcement learning.
*C. Chen, Y. Hu, Q. Zhang, H. Zou, **B. Zhu**, E. Chng*
Oral, **AAAI** 2023

Mentoring and Supervision	**Xingyu Zhu**, P.h.D at USTC *Supervisor for papers accepted at MM 2024, NeurIPS 2024/2025, ICCV 2025, and AAAI 2026.* **Kesen Zhao**, P.h.D at NTU *Supervisor for paper accepted at ICCV 2025.* **Ruoyu Wang**, P.h.D at Westlake University *Supervisor for papers accepted at ICCV 2025 and NeurIPS 2025.* **Zhiyuan Han**, P.h.D at USTC *Supervisor for paper accepted at MM 2025.* **Sirui Chen**, P.h.D at Tongji University *Supervisor for paper accepted at AAAI 2026.*
Service	*Journal Reviewer:* TPAMI, TIP, TMM, TCSVT, TCE, IJCV, Information Fusion *Conference Reviewer:* CVPR, ICCV, AAAI, MM, UAI, AISTATS, NeurIPS (Top Reviewer 2025), ICLR, ICML.
Awards	*Honorable Mention*, Nanyang Speech Forum, Singapore.　　　　　　　　　　　　　2023

	AISG PhD Fellowship, National Research Foundation, Singapore.	2021
	First Price Scholarship, THU, China.	2018
	Scholarship, China Scholarship Council, China.	2014

Internship	Research Intern, SenseTime, Beijing	Mar 2018 – Oct 2018
	Research Intern, Tencent YouTu Lab, Shanghai	Jul 2018 – Sep 2018
	Research Intern, MeiTuan, Beijing	Aug 2017 – Dec 2017

[CV compiled on 2025-12-20]