

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
CVPR	Conference on Computer Vision and Pattern Recognition	AAAI	AAAI Conference on Artificial Intelligence
NeurIPS	Conference on Neural Information Processing Systems	TIP	IEEE Transactions on Image Processing
TSG	IEEE Transactions on Smart Grid	EE	Electrical Engineering

Research Interests

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

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

work with Prof. Hanwang Zhang

Mar 2025 – Present

Researcher, SenseTime, Beijing

Jul 2019 – Nov 2020

Education

P.h.D in Computer Science, NTU, Singapore

supervisor: Prof. Hanwang Zhang

Jan 2021 – Jan 2025

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. Debaised 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. Dynamic multimodal prototype learning in vision-language models.
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

Service	<i>Journal Reviewer:</i> TPAMI, TIP, TMM, TCSVT, TCE, IJCV, Information Fusion	
	<i>Conference Reviewer:</i> CVPR, ICCV, AAAI, MM, UAI, AISTATS, NeurIPS (Top Reviewer 2025), ICLR, ICML.	
Awards	<i>Honorable Mention</i> , Nanyang Speech Forum, Singapore.	2023
	<i>AISG PhD Fellowship</i> , National Research Foundation, Singapore.	2021
	<i>First Price Scholarship</i> , THU, China.	2018
	<i>Scholarship</i> , China Scholarship Council, China.	2014
	<i>Bronze Medal</i> , China Physics Olympiad, China.	2011
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 2025-11-25]