Haotian Xue

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Education

2018.8 – 2022.6 **B.E. @ Computer Science, Shanghai Jiao Tong University**, Shanghai
Advisor: *Quanshi Zhang, Zhouhan Lin*

2022.8 – 2024.8 **M.S. @ Computer Science, Georgia Tech**, Atlanta
Advisor: *Yongxin Chen*

2022.8 – 2026 (expected) **Ph.D. @ Machine Learning, Georgia Tech**, Atlanta
Advisor: *Yongxin Chen*

History

2021.9 – 2021.12 **Research Intern,** Microsoft Research Asia
Advisor: *Lei Cui*
Project: *Large pretraining for document AI*

2021.9 – 2022.12 **Visiting Research Intern,** MIT CSAIL
Advisor: *Josh Tenenbaum*
Mentor: *Yunzhu Li, Fish Tung*
Project: *Learning 3D Intuitive Physics from Video*

2022.9 – Present **Graduate Research Assistant,** Georgia Tech
Advisor: *Yongxin Chen*
Project: *Diffusion Models, Machine Learning*

2024.5 - 2024.8 **Research Intern,** Nvidia Research
Manager: *Ming-yu Liu*
Advisor: *Jason(Yao) Lu, Jinwei Gu, Jiaojiao Fan*
Project: *Visual Grounding of Vision-Language Models*

2025.5 - 2025.11 **Machine Learning Researcher,** Adobe Firefly
Manager: *Jinrong Xie*
Advisor: *Qi Chen, Xun Huang, Eli Shechtman*
Project: *Distillation and Motion Improvement of Video Diffusion Model*

Research Interest

My research interest lies in broad aspects of Machine Learning topics such as CV and NLP.
Currently, I am working on the **evaluation** and **post-training** of visual Generative Models, e.g. Vision-Language Models and Generative Image/Video Diffusion Models. I am currently interested in the following domain:

- Visual Grounding / Spatial Understanding of Vision-Language-Models.
- Physical Alignment / 3D Consistency / Post-training of Video Diffusion Models.

Previously, I worked on adversarial attacks and defenses in GenAI, I did investigation in attacks and defenses for diffusion-based models, and developed several important algorithms: e.g. **Diff-PGD** [NeurIPS 2023], **SDS-Attack** [ICLR 2024], **Diff-Pure** [NeurIPS W 2024] and **DP-Attacker** [NeurIPS 2024].

Machine Learning Conference Papers

*** indicate equal contribution**

1. Y. Chen*, **H. Xue***, and Y. Chen, "Diffusion policy attacker: Crafting adversarial attacks for diffusion-based policies," *NeurIPS*, 2024.
2. J. Fan, **H. Xue**, Q. Zhang, and Y. Chen, "Refdrop: Controllable consistency in image or video generation via reference mixing attention," *NeurIPS*, 2024.
3. A. Mete, **H. Xue**, A. Wilcox, Y. Chen, and A. Garg, "Quest: Self-supervised skill abstractions for continuous control," *NeurIPS*, 2024.
4. **H. Xue** and Y. Chen, "Pixel is a barrier: Diffusion models are more adversarially robust than we think," *NeurIPSW: Safe GenAI*, 2024.
5. **H. Xue**, C. Liang*, X. Wu*, and Y. Chen, "Towards effective protection against diffusion-based mimicry through score distillation," *ICLR*, 2024.
6. **H. Xue**, A. Araujo, B. Hu, and Y. Chen, "Diffusion-based adversarial sample generation for improved stealthiness and controllability," *NeurIPS*, 2023.
7. **H. Xue**, A. Torralba, J. Tenenbaum, D. Yamins, Y. Li, and H. Tung, "3d-intphys: Towards more generalized 3d-grounded visual intuitive physics under challenging scenes," *NeurIPS*, 2023.
8. S. Hou*, J. Kai*, **H. Xue***, *et al.*, "Syntax-guided localized self-attention by constituency syntactic distance," *EMNLP Findings*, 2022.

Other Preprints / Ongoing Project

*** indicate equal contribution**

1. **H. Xue**, Y. Ge, Y. Zeng, *et al.*, *Point-it-out: Benchmarking embodied reasoning for vision language models in multi-stage visual grounding*, 2025.
2. S. Hou, J. Kai*, Y. Zhang*, **H. Xue***, X. Wang, and Z. Lin, *Learning to adaptively incorporate external syntax through gated self-attention*, 2022.
3. X. Cheng, X. Wang*, **H. Xue***, Z. Liang, and Q. Zhang, *A hypothesis for the aesthetic appreciation in neural networks*, 2021.
4. H. Zhang, **H. Xue**, J. Chen, Y. Chen, W. Shen, and Q. Zhang, *Evaluation of attribution explanations without ground truth*, 2021.

Skills

Coding	Python, C++, LaTeX, Pytorch, FairSeq, Numpy, Gym, HTML, CSS
Miscs	Piano, Football, Film, MOBA

Academic Service

I served as reviewer for NeurIPS (2022, 2023, 2024, 2025), ICLR (2023, 2024, 2025), ICML (2022, 2023, 2024, 2025), TPAMI (2024, 2025), CVPRW (2025), and AAAI (2026).

Awards

2019	Singapore Tech Engineering Scholarship (Top 10%)
2019-2022	SJTU Zhiyuan Honor Award (Top 5%)

Awards (continued)

2022	SJTU Outstanding Graduate
2023	NeurIPS Scholar Award
	NeurIPS Outstanding Reviewer
2024	NeurIPS Outstanding Reviewer
	ICLR Travel Award
	NeurIPS Scholar Award