Haotian Xue

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🌐 http://xavihart.github.io/

Education

2018 – 2022	🔖 **B.E. @ Computer Science, Shanghai Jiao Tong University**, Shanghai Advisor: *Quanshi Zhang, Zhouhan Lin*
2022 – Now	🔖 **Ph.D. @ Machine Learning, Georgia Tech**, Atlanta Advisor: *Yongxin Chen*

Employment 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: *3D Intuitive Physics*
2022.9 – Present	🔖 **Graduate Research Assistant,** Georgia Tech Advisor: *Yongxin Chen* Project: *Generative Models*
2024.5 - 2024.8	🔖 **Research Intern,** Nvidia Research Manager: *Ming-yu Liu* Advisor: *Jinwei Gu, Jiaojiao Fan, Jason Lu* Project: *Embodiment AI*

Research Publications

I am interested in the broad aspects of machine learning, computer vision and NLP. Currently I am interested in generative models (especially diffusion models), and robust and responsible AI. I am also interested in explainable AI and designing compositional structure and algorithms. Here are some of my research outputs:

* indicate equal contribution

1. Y. Chen*, **H. Xue***, and Y. Chen, "Diffusion policy attacker: Crafting adversarial attacks for diffusion-based policies," *[In Submission]*, 2024.

2. J. Fan, **H. Xue**, Q. Zhang, and Y. Chen, "Refdrop: Controllable consistency in image or video generation via reference mixing attention," *[In Submission]*, 2024.

3. A. Mete, **H. Xue**, A. Wilcox, Y. Chen, and A. Garg, "Quest: Self-supervised skill abstractions for continuous control," *[In Submission]*, 2024.

4. **H. Xue** and Y. Chen, "Pixel is a barrier: Diffusion models are more adversarially robust than we think," *[In Submission]*, 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*, Y. Zhang*, **H. Xue***, X. Wang, and Z. Lin, "Learning to adaptively incorporate external syntax through gated self-attention," *[In submission]*, 2022.

9 S. Hou*, J. Kai*, **H. Xue***, *et al.*, "Syntax-guided localized self-attention by constituency syntactic distance," *EMNLP Findings*, 2022.

10 **H. Xue** and N. Ye, "Active adversarial learning," *Bachelor Thesis*, 2022.

11 X. Cheng, X. Wang*, **H. Xue***, Z. Liang, and Q. Zhang, "A hypothesis for the aesthetic appreciation in neural networks," *arXiv preprint arXiv:2108.02646*, 2021.

12 H. Zhang, **H. Xue**, J. Chen, Y. Chen, W. Shen, and Q. Zhang, "Evaluation of attribution explanations without ground truth," *[In submission]*, 2021.

Skills

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

Academic Services

Reviewer for ICML2022, NeurIPS2022, ICML2023, NeurIPS2023, ICLR2024, ICML2024, NeurIPS204

Awards

2019	Singapore Tech Engineering Scholarship (Top 10%)
2019-2022	SJTU Zhiyuan Honor Award(Top 5%)
2022	SJTU Outstanding Graduate
2023	NeurIPS Scholar Award
2024	ICLR Travel Award