

XIAOMING ZHAO

CONTACT INFORMATION

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RESEARCH INTERESTS

3D computer vision and machine learning.

I am especially interested in 1) **reconstruction**: turning a few RGB/RGB-D images into a holistic reconstruction (of geometry, texture, and object's dynamics); 2) **generation**: combining the collection of RGB/RGB-D data and the reconstruction with possibly other modalities (e.g., text and/or other images) into a 3D/4D-aware generative model to produce novel content.

EDUCATION

University of Illinois Urbana-Champaign, Urbana, IL, USA

Doctor of Philosophy in Computer Science

08/2019 - Present

Advisor: Prof. Alexander Schwing

Master of Science in Computer Science

08/2017 - 05/2019

Advisor: Prof. Jian Peng

University of Science and Technology of China, Hefei, Anhui, China

Bachelor of Science in Statistics

09/2012 - 07/2016

PUBLICATIONS

[* indicates equal contribution]

- [8] Is Generalized Dynamic Novel View Synthesis from Monocular Videos Possible Today?
Xiaoming Zhao, Alex Colburn, Fangchang Ma, Miguel Ángel Bautista, Joshua M. Susskind, Alexander G. Schwing.
arXiv, 2023.
- [7] Occupancy Planes for Single-view RGB-D Human Reconstruction.
Xiaoming Zhao, Yuan-Ting Hu, Zhongzheng Ren, Alexander G. Schwing.
In *Proceedings of the AAAI Conference on Artificial Intelligence (AAAI)*, 2023.
- [6] Generative Multiplane Images: Making a 2D GAN 3D-Aware.
Xiaoming Zhao, Fangchang Ma, David Güera, Zhile Ren, Alexander G. Schwing, Alex Colburn.
In *Proceedings of the European Conference on Computer Vision (ECCV)*, 2022. **(Oral)**.
- [5] Initialization and Alignment for Adversarial Texture Optimization.
Xiaoming Zhao, Zhizhen Zhao, Alexander G. Schwing.
In *Proceedings of the European Conference on Computer Vision (ECCV)*, 2022.
- [4] Class-agnostic Reconstruction of Dynamic Objects from Videos.
Zhongzheng Ren*, **Xiaoming Zhao***, Alexander G. Schwing.
In *Proceedings of the Neural Information Processing Systems (NeurIPS)*, 2021.
- [3] The Surprising Effectiveness of Visual Odometry Techniques for Embodied PointGoal Navigation.
Xiaoming Zhao, Harsh Agrawal, Dhruv Batra, Alexander G. Schwing.
In *Proceedings of the International Conference on Computer Vision (ICCV)*, 2021.
- [2] Mitigating Data Scarcity in Protein Binding Prediction Using Meta-Learning.
Yunan Luo*, Jianzhu Ma*, **Xiaoming Zhao**, Yufeng Su, Yang Liu, Trey Ideker, Jian Peng.
In *Proceedings of the Research in Computational Molecular Biology (RECOMB)*, 2019.
- [1] Integrating Thermodynamic and Sequence Contexts Improves Protein-RNA Binding Prediction.
Yufeng Su, Yunan Luo, **Xiaoming Zhao**, Yang Liu, Jian Peng.
PLOS Computational Biology, 2019.

WORKSHOPS	[2] Learning from Synthesized Demonstrations. Xiaoming Zhao , Yang Liu, Jian Peng. In <i>Proceedings of the International Conference on Machine Learning Workshop on Learning in Artificial Open Worlds (ICML-W)</i> , 2020.	
	[1] Approximation Gradient Error Variance Reduced Optimization. Wei-Ye Zhao, Yang Liu, Xiaoming Zhao , Jie-Lin Qiu, Jian Peng. In <i>Proceedings of the AAAI Conference on Artificial Intelligence Workshop on Reinforcement Learning in Games (AAAI-W)</i> , 2019.	
RESEARCH EXPERIENCES	University of Illinois Urbana-Champaign , Urbana, IL, USA Graduate Research Assistant. Advisor: Alexander Schwing	08/2019 - present
	<ul style="list-style-type: none"> Conducting research on 3D vision. 	
	Google , San Francisco, CA, USA Research Intern. With Keunhong Park and Ricardo Martin-Brualla	09/2023 - present
	<ul style="list-style-type: none"> Conducting research on diffusion models. 	
	Apple Inc. , Seattle, WA, USA Research Intern. With Alexander Schwing and Alex Colburn	02/2023 - 09/2023
	<ul style="list-style-type: none"> Conducting research on 3D vision. 	
	Reality Labs, Meta , Seattle, WA, USA Research Scientist Intern. With Shunsuke Saito, Minh P. Vo, and Jia-Bin Huang.	05/2022 - 12/2022
	<ul style="list-style-type: none"> Conducted research on avatar reconstruction in Computational Photography group. 	
Apple Inc. , Seattle, WA, USA Machine Learning Research Intern. With Alex Colburn and Fangchang Ma	05/2021 - 05/2022	
<ul style="list-style-type: none"> Conducted research on generative 3D models. Published in ECCV 2022 as oral presentation. 		
Kwai Inc. Y-tech AI Lab , Bellevue, WA, USA Research Intern. With Ji Liu	05/2019 - 08/2019	
<ul style="list-style-type: none"> Developed AI agent for multi-player poker game via counterfactual regret minimization. 		
Tencent AI Lab , Bellevue, WA, USA Machine Learning Researcher Intern. With Boqing Gong	05/2018 - 08/2018	
<ul style="list-style-type: none"> Developed Markov decision process algorithm in multi-agent cost-aware environments. 		
University of Illinois Urbana-Champaign , Urbana, IL, USA Graduate Research Assistant. Advisor: Jian Peng	07/2017 - 05/2019	
<ul style="list-style-type: none"> Utilized high-quality synthesized demonstrations from imperfect ones to improve self-imitation learning's efficiency (MS Thesis). Mitigated data scarcity in Protein Binding Prediction field through few-shot learning (RECOMB'19). 		
TEACHING	University of Illinois Urbana-Champaign	
	CS588: Autonomous Vehicle System Engineering	Fall 2021
	CS446/ECE449: Machine Learning	Spring 2021
	CS440/ECE448: Artificial Intelligence	Fall 2020
	CS498AML: Applied Machine Learning	Spring 2019
	CS598BL: Special Topics on Adversarial Machine Learning	Fall 2018

SELECTED AWARDS AND HONORS	University of Illinois Urbana-Champaign	
	University nomination (one of three) for 2023 Apple Scholars in AI/ML	2022
	Graduate Student SSBG Fellowship	2020
	University of Science and Technology of China	
	Outstanding Graduates	2016
	Outstanding Undergraduate Scholarship	2013, 2015
	Seagate Scholarship	2014
	Outstanding Freshman Scholarship	2012
	Ministry of Education, China	
	Honorably received waiver for the National College Entrance Exam (top 0.01%)	2012
Chinese Chemical Society		
Silver Medalist nation-wide, the 25 th Chinese Chemistry Olympiad (top 0.01%)	2011	
SERVICES	Reviewing for Journals	
	Transactions on Pattern Analysis and Machine Intelligence (TPAMI)	2023
	Reviewing for International Conferences	
	IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)	2022, 2023
	International Conference on Computer Vision (ICCV)	2023
	Neural Information Processing Systems (NeurIPS)	2022, 2023
	International Conference on Machine Learning (ICML)	2022, 2023
	International Conference on Learning Representations (ICLR)	2023, 2024
AAAI Conference on Artificial Intelligence (AAAI)	2023	
IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)	2024	