

XIAOMING ZHAO

CONTACT INFORMATION

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+1-773-668-4160

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<https://xiaoming-zhao.com/>

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]

- [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 *Proceedings of the International Conference on Machine Learning Workshop on Learning in Artificial Open Worlds (ICML-W)*, 2020.

- [1] Approximation Gradient Error Variance Reduced Optimization.
 Wei-Ye Zhao, Yang Liu, **Xiaoming Zhao**, Jie-Lin Qiu, Jian Peng.
 In *Proceedings of the AAAI Conference on Artificial Intelligence Workshop on Reinforcement Learning in Games (AAAI-W)*, 2019.

RESEARCH EXPERIENCES	<p>University of Illinois Urbana-Champaign, Urbana, IL, USA 08/2019 - present Graduate Research Assistant. Advisor: Alexander Schwing</p> <ul style="list-style-type: none"> • Conducting research on 3D vision. <p>Google, San Francisco, CA, USA 09/2023 - present Research Intern. With Keunhong Park and Ricardo Martin-Brualla</p> <ul style="list-style-type: none"> • Conducting research on diffusion models. <p>Apple Inc., Seattle, WA, USA 02/2023 - 09/2023 Research Intern. With Alexander Schwing and Alex Colburn</p> <ul style="list-style-type: none"> • Conducting research on 3D vision. <p>Reality Labs, Meta, Seattle, WA, USA 05/2022 - 12/2022 Research Scientist Intern. With Shunsuke Saito, Minh P. Vo, and Jia-Bin Huang.</p> <ul style="list-style-type: none"> • Conducted research on avatar reconstruction in Computational Photography group. <p>Apple Inc., Seattle, WA, USA 05/2021 - 05/2022 Machine Learning Research Intern. With Alex Colburn and Fangchang Ma</p> <ul style="list-style-type: none"> • Conducted research on generative 3D models. • Published in ECCV 2022 as oral presentation. <p>Kwai Inc. Y-tech AI Lab, Bellevue, WA, USA 05/2019 - 08/2019 Research Intern. With Ji Liu</p> <ul style="list-style-type: none"> • Developed AI agent for multi-player poker game via counterfactual regret minimization. <p>Tencent AI Lab, Bellevue, WA, USA 05/2018 - 08/2018 Machine Learning Researcher Intern. With Boqing Gong</p> <ul style="list-style-type: none"> • Developed Markov decision process algorithm in multi-agent cost-aware environments. <p>University of Illinois Urbana-Champaign, Urbana, IL, USA 07/2017 - 05/2019 Graduate Research Assistant. Advisor: Jian Peng</p> <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	<p>University of Illinois Urbana-Champaign</p> <table border="0" style="width: 100%;"> <tr> <td style="padding-right: 20px;">CS588: Autonomous Vehicle System Engineering</td> <td style="text-align: right;">Fall 2021</td> </tr> <tr> <td style="padding-right: 20px;">CS446/ECE449: Machine Learning</td> <td style="text-align: right;">Spring 2021</td> </tr> <tr> <td style="padding-right: 20px;">CS440/ECE448: Artificial Intelligence</td> <td style="text-align: right;">Fall 2020</td> </tr> <tr> <td style="padding-right: 20px;">CS498AML: Applied Machine Learning</td> <td style="text-align: right;">Spring 2019</td> </tr> <tr> <td style="padding-right: 20px;">CS598BL: Special Topics on Adversarial Machine Learning</td> <td style="text-align: right;">Fall 2018</td> </tr> </table>	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
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SELECTED AWARDS AND HONORS	<p>University of Illinois Urbana-Champaign</p> <table border="0" style="width: 100%;"> <tr> <td style="padding-right: 20px;">University nomination (one of three) for 2023 Apple Scholars in AI/ML</td> <td style="text-align: right;">2022</td> </tr> <tr> <td style="padding-right: 20px;">Graduate Student SSBG Fellowship</td> <td style="text-align: right;">2020</td> </tr> </table>	University nomination (one of three) for 2023 Apple Scholars in AI/ML	2022	Graduate Student SSBG Fellowship	2020						
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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
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Chinese Chemical Society

Silver Medalist nation-wide, the 25 th Chinese Chemistry Olympiad (top 0.01%)	2011
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SERVICES**Reviewing for Journals**

Transactions on Pattern Analysis and Machine Intelligence (TPAMI)	2023
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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