# XIAOMING ZHAO

CONTACT
INFORMATION

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RESEARCH
INTERESTS

**3D/4D computer vision**, **neural rendering**, and **machine learning**. I am particularly interested in
- **reconstruction** of geometry, appearance, and dynamics;
- **generation** of novel content with (multimodal) 3D/4D-aware generative models.

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

[10] GoMAvatar: Efficient Animatable Human Modeling from Monocular Video Using Gaussians-on-Mesh.
Jing Wen, **Xiaoming Zhao**, Zhongzheng Ren, Alexander G. Schwing, Shenlong Wang.
In *Proceedings of the Conference on Computer Vision and Pattern Recognition (**CVPR**)*, 2024.

[9] NeRFDeformer: NeRF Transformation from a Single View via 3D Scene Flows.
Zhenggang Tang, Zhongzheng Ren, **Xiaoming Zhao**, Bowen Wen, Jonathan Tremblay, Stan Birchfield, Alexander G. Schwing.
In *Proceedings of the Conference on Computer Vision and Pattern Recognition (**CVPR**)*, 2024.

[8] Pseudo-Generalized Dynamic View Synthesis from a Video.
**Xiaoming Zhao**, Alex Colburn, Fangchang Ma, Miguel Ángel Bautista, Joshua M. Susskind, Alexander G. Schwing.
In *Proceedings of the International Conference on Learning Representations (**ICLR**)*, 2024.

[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.
(* indicates equal contribution)
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.
(\* indicates equal contribution)
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

**Google**, San Francisco, CA, USA                                                09/2023 - present
Research Intern. *With Keunhong Park, Philipp Henzler, Pratul Srinivasan, and Ricardo Martin-Brualla*
- Conducting research on diffusion models.

**Apple**, Seattle, WA, USA                                                       02/2023 - 09/2023
Research Intern. *With Alexander Schwing and Alex Colburn*
- Conducted research on dynamic novel view synthesis.

**Reality Labs, Meta**, Seattle, WA, USA                                          05/2022 - 12/2022
Research Scientist Intern. *With Shunsuke Saito, Minh P. Vo, and Jia-Bin Huang*
- Conducted research on avatar reconstruction.

**Apple**, Seattle, WA, USA                                                       05/2021 - 05/2022
Machine Learning Research Intern. *With Alex Colburn and Fangchang Ma*
- Conducted research on generative 3D models.

**Kwai Inc. Y-tech AI Lab**, Bellevue, WA, USA                                    05/2019 - 08/2019
Research Intern. *With Ji Liu*
- Developed AI agent for multi-player poker game via counterfactual regret minimization.

**Tencent AI Lab**, Bellevue, WA, USA                                             05/2018 - 08/2018
Machine Learning Researcher Intern. *With Boqing Gong*
- Developed Markov decision process algorithm in multi-agent cost-aware environments.

INVITED TALKS

**Pseudo-Generalized Dynamic View Synthesis from a Video**
Generative 3D Reading Group @ Google                                              Jan 2024

**Generative Multiplane Images**
AI Young Researcher Seminar                                                       Sep 2022

TEACHING

**University of Illinois Urbana-Champaign**
CS588: Autonomous Vehicle System Engineering                                      Fall 2021
CS446/ECE449: Machine Learning                                                    Spring 2021

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| 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**

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| 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**

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| Outstanding Graduates | 2016 |
| Outstanding Undergraduate Scholarship | 2013, 2015 |
| Seagate Scholarship | 2014 |
| Outstanding Freshman Scholarship | 2012 |

**Ministry of Education, China**

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| Honorably received waiver for the National College Entrance Exam (top 0.01%) | 2012 |

**Chinese Chemical Society**

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| Silver Medalist nation-wide, the $25^{th}$ Chinese Chemistry Olympiad (top 0.01%) | 2011 |

## SERVICES

**Reviewing for Journals**

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|---|---|
| International Journal of Computer Vision (IJCV) | 2023 - present |
| Transactions on Pattern Analysis and Machine Intelligence (TPAMI) | 2023 - present |

**Reviewing for International Conferences**

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|---|---|
| IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) | 2022 - present |
| International Conference on Computer Vision (ICCV) | 2023 - present |
| European Conference on Computer Vision (ECCV) | 2024 - present |
| Neural Information Processing Systems (NeurIPS) | 2022 - present |
| International Conference on Machine Learning (ICML) | 2022 - present |
| International Conference on Learning Representations (ICLR) | 2023 - present |
| AAAI Conference on Artificial Intelligence (AAAI) | 2023 |
| IEEE/CVF Winter Conference on Applications of Computer Vision (WACV) | 2024 |