

ZIYI WU

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EDUCATION

University of Toronto, Toronto, ON, Canada

Sept. 2021 – Present

Ph.D. in Computer Science

Advisor: Prof. [Igor Gilitschenski](#)

Tsinghua University, Beijing, P.R.China

Aug. 2017 – Jun. 2021

B.Eng. in Automation

Advisor: Prof. [Jiwen Lu](#)

EXPERIENCE

Google DeepMind, Toronto

June. 2025 – Present

Student Researcher

Mentor: Dr. [Saurabh Saxena](#)

Generation

Snap Research, Remote

Feb. 2025 – May. 2025

Research Intern

Mentor: Dr. [Aliaksandr Siarohin](#)

Post-training for video diffusion

Snap Research, LA

Jun. 2024 – Dec. 2024

Research Intern

Mentor: Dr. [Aliaksandr Siarohin](#)

Controllable video generation

Google DeepMind, Remote

Dec. 2023 – Jun. 2024

Student Researcher

Mentor: Dr. [Thomas Kipf](#)

3D-aware controllable image generation

Vector Institute, Toronto

Sept. 2021 – Present

Student Researcher

OpenMMLab, SenseTime, Beijing

Mar. 2021 – Aug. 2021

Research Intern

Mentor: Dr. [Kai Chen](#), Dr. [Wenwei Zhang](#)

Develop open source codebase for 3D scene understanding ([MMDetection3D](#))

SELECTED PUBLICATIONS & MANUSCRIPTS

* indicates equal contribution/supervision

Preprints

1. **DenseDPO: Fine-Grained Temporal Preference Optimization for Video Diffusion Models**
[Ziyi Wu](#), [Anil Kag](#), [Ivan Skorokhodov](#), [Willi Menapace](#), [Ashkan Mirzaei](#), [Igor Gilitschenski*](#), [Sergey Tulyakov*](#), [Aliaksandr Siarohin*](#).
Under Review.

Journal Papers

1. **Learning Efficient Binarized Object Detectors with Information Compression**
[Ziwei Wang](#), [Jiwen Lu](#), [Ziyi Wu](#), [Jie Zhou](#).
T-PAMI, 2021.

Conference Papers

1. **Mind the Time: Temporally-Controlled Multi-Event Video Generation**
[Ziyi Wu](#), [Aliaksandr Siarohin](#), [Willi Menapace](#), [Ivan Skorokhodov](#), [Yuwei Fang](#), [Varnith Chordia](#), [Igor Gilitschenski*](#), [Sergey Tulyakov*](#).
CVPR, 2025.
2. **SG-I2V: Self-Guided Trajectory Control in Image-to-Video Generation**
[Koichi Namekata](#), [Sherwin Bahmani](#), [Ziyi Wu](#), [Yash Kant](#), [Igor Gilitschenski](#), [David B. Lindell](#).
ICLR, 2025.
3. **Neural Assets: 3D-Aware Multi-Object Scene Synthesis with Image Diffusion Models**
[Ziyi Wu](#), [Yulia Rubanova](#), [Rishabh Kabra](#), [Drew A. Hudson](#), [Igor Gilitschenski](#), [Yusuf Aytar](#), [Sjoerd van Steenkiste](#), [Kelsey Allen](#), [Thomas Kipf](#).
NeurIPS, 2024 (Spotlight).
4. **LEOD: Label-Efficient Object Detection for Event Cameras**
[Ziyi Wu](#), [Mathias Gehrig](#), [Qing Lyu](#), [Xudong Liu](#), [Igor Gilitschenski](#).
CVPR, 2024.
5. **SPAD: Spatially Aware Multiview Diffusers**
[Yash Kant](#), [Ziyi Wu](#), [Michael Vasilkovsky](#), [Guocheng Qian](#), [Jian Ren](#), [Riza Alp Guler](#), [Bernard Ghanem](#), [Sergey Tulyakov*](#), [Igor Gilitschenski*](#), [Aliaksandr Siarohin*](#).
CVPR, 2024.
6. **SlotDiffusion: Object-Centric Generative Modeling with Diffusion Models**
[Ziyi Wu](#), [Jingyu Hu*](#), [Wuyue Lu*](#), [Igor Gilitschenski](#), [Animesh Garg](#).
NeurIPS, 2023 (Spotlight) | *ICLR@NeSy-GeMs Workshop*, 2023.
7. **SlotFormer: Unsupervised Visual Dynamics Simulation with Object-Centric Models**
[Ziyi Wu](#), [Nikita Dvornik](#), [Klaus Greff](#), [Thomas Kipf*](#), [Animesh Garg*](#).
ICLR, 2023 | *UAI@CRL Workshop*, 2022 | *ECCV@MVCS Challenge*, 2022.
8. **Breaking Bad: A Dataset for Geometric Fracture and Reassembly**
[Silvia Sellán*](#), [Yun-Chun Chen*](#), [Ziyi Wu*](#), [Animesh Garg](#), [Alec Jacobson](#).
NeurIPS Datasets and Benchmarks Track (Featured Paper Presentation), 2022.
9. **Instance Similarity Learning for Unsupervised Feature Representation**
[Ziwei Wang](#), [Yunsong Wang](#), [Ziyi Wu](#), [Jiwen Lu](#), [Jie Zhou](#).
ICCV, 2021.
10. **BiDet: An Efficient Binarized Object Detector**
[Ziwei Wang](#), [Ziyi Wu](#), [Jiwen Lu](#), [Jie Zhou](#).
CVPR, 2020.

INVITED TALK

Talk at Google DeepMind Toronto Controllable Generation with Diffusion Models (SPAD, Neural Assets, SG-I2V, MinT)	Apr. 2025
Invited talk at Vector Institute Neural Assets: 3D-Aware Multi-Object Scene Synthesis with Image Diffusion Models	Jan. 2025
Invited talk in Prof. Kun Zhang's group	Feb. 2023
Invited talk in Neuroinformatics Group	Nov. 2022
Winner talk at ECCV@MVCS Workshop CLEVRER Track SlotFormer: Unsupervised Visual Dynamics Simulation with Object-Centric Models	Oct. 2022

HONORS & AWARDS

- Outstanding reviewer at [CVPR 2025](#) and [CVPR@CVEU Workshop](#) 2025
- Outstanding reviewer at [NeurIPS 2024](#) 2024
- Outstanding reviewer at [NeurIPS 2023](#) 2023
- **1st place in CLEVRER track at MVCS Challenge (ECCV 2022 Workshop)** 2022
- Outstanding Graduates (Beijing & Tsinghua University & Dept. of Automation) 2021
- **SenseTime Undergraduate Scholarship for AI Research** 2020
- [Xiaomi](#) Scholarship, Tsinghua University 2020
- Fang Chongzhi Scholarship, Tsinghua University 2019
- **Chinese National Scholarship** 2018
- Spark Program Membership, Tsinghua University

ACADEMIC SERVICES

Conference Reviewer/PC Member

- IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 2022-25
- International Conference on Computer Vision (ICCV) 2023-25
- European Conference on Computer Vision (ECCV) 2022-24
- Conference on Neural Information Processing Systems (NeurIPS) 2022-24
- International Conference on Machine Learning (ICML) 2023-25
- International Conference on Learning Representations (ICLR) 2024-25
- Association for the Advancement of Artificial Intelligence (AAAI) 2023-24
- International Joint Conference on Artificial Intelligence (IJCAI) 2024
- IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2022
- IEEE International Conference on Robotics and Automation (ICRA) 2023-24

Journal Reviewer

- IEEE Transactions on Pattern Analysis and Machine Intelligence (T-PAMI)
- Transactions on Machine Learning Research (TMLR)
- International Symposium of Robotic Research (ISRR)
- IEEE Robotics and Automation Letters (RA-L)

Workshop Reviewer

- [ICLR@OSC Workshop](#) 2022
- [CVPR@CVEU Workshop](#) 2025

Seminar Co-Organizer

- [Toronto AI in Robotics \(AIR\) Seminar](#) 2022-23

MENTORING

Mohammad Mohammadi

PhD, University of Toronto

Project: Event-based vision

Sept. 2023 – Present

Koichi Namekata

Undergrad, University of Toronto

Project: Controllable video generation

Next stop: PhD, University of Oxford

May. 2024 – Jan. 2025

Robert Ren

Undergrad, University of Toronto

Project: Personalized visual generation with diffusion models

Sept. 2023 – Jul. 2024

Anastasiia Pedan

UofT CS Summer Program for Ukraine Students

Project: Object-centric reinforcement learning

May. 2023 – May. 2024

Jasper Gerigk

Undergrad, University of Toronto

Project: Object-centric reinforcement learning

Next stop: PhD, University of Toronto

May. 2023 – May. 2024

Qing Lyu

Undergrad, University of Toronto

Project: Event-based vision

Next stop: Data Scientist, Royal Bank of Canada

May. 2023 – Nov. 2023

Xudong Liu

MScAC, University of Toronto

Project: Event-based vision

Next stop: Research Engineer, ByteDance Vancouver

Oct. 2022 – Nov. 2023

Jingyu Hu

Undergrad, University of Toronto

Project: Object-centric diffusion model

Oct. 2022 – May. 2023

Wuyue Lu

Undergrad, University of Toronto

Project: Object-centric diffusion model

Next stop: Master, Simon Fraser University

Oct. 2022 – May. 2023

Jiaqi Xi

Undergrad, Peking University

Project: Object-centric dynamics model

Next stop: Master, Columbia University

Sept. 2021 – May. 2022