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 Research, Toronto   Dec. 2023 – Present
Student Researcher (Remote)   Mentor: Dr. Thomas Kipf
Controllable image generation

Toronto Intelligent Systems Lab, University of Toronto   Sept. 2022 – Present
Graduate Research Assistant   Supervisor: Prof. Igor Gilitschenski
Image & video generation

People, AI and Robotics Group, University of Toronto   Sept. 2021 – Aug. 2022
Graduate Research Assistant   Supervisor: Prof. Animesh Garg & Prof. Andrea Tagliasacchi
Video understanding

OpenMMLab, SenseTime Ltd.   Mar. 2021 – Aug. 2021
Research Intern   Mentor: Dr. Kai Chen, Dr. Wenwei Zhang
Develop open source codebase for 3D scene understanding (MMDetection3D)

Geometric Computation Group, Stanford University   Jun. 2020 – Dec. 2020
Research Intern (Remote)   Supervisor: Prof. Leonidas J. Guibas
3D adversarial attack and defense in point cloud

Intelligent Vision Group, Tsinghua University   Apr. 2019 – Jun. 2021
Undergraduate Researcher Assistant   Supervisor: Prof. Jiwen Lu
Efficient design for 2D object detectors

PUBLICATIONS

* indicates equal contribution/supervision

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

2. **LEOD: Label-Efficient Object Detection for Event Cameras**
   Ziyi Wu, Mathias Gehrig, Qing Lyu, Xudong Liu, Igor Gilitschenski.
   CVPR, 2024.

3. **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.

4. **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.

5. **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.

6. **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.

7. **Instance Similarity Learning for Unsupervised Feature Representation**
   Ziwei Wang, Yunsong Wang, **Ziyi Wu**, Jiwen Lu, Jie Zhou.
   ICCV, 2021.

8. **BiDet: An Efficient Binarized Object Detector**
   Ziwei Wang, **Ziyi Wu**, Jiwen Lu, Jie Zhou.
   CVPR, 2020.

HONORS & AWARDS

- 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
- Chinese National Scholarship   2018

ACADEMIC SERVICES

Conference & Journal Reviewer

- IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)   2022-24
- International Conference on Computer Vision (ICCV)   2023
- European Conference on Computer Vision (ECCV)   2022-24
- Conference on Neural Information Processing Systems (NeurIPS)   2022-23
- International Conference on Machine Learning (ICML)   2023-24
- International Conference on Learning Representations (ICLR)   2024
- 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
- IEEE Transactions on Pattern Analysis and Machine Intelligence (T-PAMI)
- International Symposium of Robotic Research (ISRR)
- IEEE Robotics and Automation Letters (RA-L)

Workshop Reviewer

- ICLR@OSC Workshop   2022