

# Yiming ZUO

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## Education

**Princeton University, Princeton, USA**

Sep 2021 - Present

*Ph.D. in Computer Science*

- Research Advisor: [Prof. Jia Deng](#)

**Carnegie Mellon University, Pittsburgh, USA**

Aug 2019 - Aug 2021

*M.S. in Robotics (MSR)*

- Research Advisor: [Prof. Katerina Fragkiadaki](#)
- GPA: 4.19/4.33
- Core Courses: Computer Vision, Machine Learning, Reinforcement Learning, Robotics Manipulation & Control

**Tsinghua University, Beijing, China**

Sep 2015 - Jul 2019

*B.Eng. in Electronic Engineering (with honors)*

- GPA: 3.80/4.00, Ranking: 21/246 (top 10%).
- Core Courses: Signal and Systems (A+), Image Processing (A+), Signal Processing Methods(A+), Machine Learning and Cognition(A), Probabilistic Theory and Stochastic Process (A).

**National University of Singapore, Singapore**

Aug 2017 - Dec 2017

*Exchange student, Dept. of ECE*

- GPA: 5.0/5.0, with all five courses graded A+

## Research Interests

My research focus is 3D computer vision. I'm especially interested in 3D scene reconstruction and relevant techniques, including single-view depth estimation/completion, and multi-view scene reconstruction and rendering. My long term research goal is to create immersive user experience for augmented reality and telepresence.

## Publications

1. **Yiming Zuo**, Jia Deng. OGNI-DC: Robust Depth Completion with Optimization-Guided Neural Iterations. ECCV 2024. [[pdf](#)]
2. Alexander Raistrick\*, Lingjie Mei\*, Karhan Kayan\*, David Yan, **Yiming Zuo**, Beining Han, Hongyu Wen, Meenal Parakh, Stamatis Alexandropoulos, Lahav Lipson, Zeyu Ma, Jia Deng. Infinigen Indoors: Photorealistic Indoor Scenes using Procedural Generation. CVPR 2024. [[pdf](#)] [[website](#)]
3. Alexander Raistrick\*, Lahav Lipson\*, Zeyu Ma\*, Lingjie Mei, Mingzhe Wang, **Yiming Zuo**, Karhan Kayan, Hongyu Wen, Beining Han, Yihan Wang, Alejandro Newell, Hei Law, Ankit Goyal, Kaiyu Yang, Jia Deng. Infinite Photorealistic Worlds using Procedural Generation. CVPR 2023. [[pdf](#)] [[website](#)]
4. **(Oral Presentation) Yiming Zuo**, Jia Deng. View Synthesis with Sculpted Neural Points. ICLR 2023. [[pdf](#)] [[video](#)]
5. Adam Harley, **Yiming Zuo**, Jing Wen, Ayush Mangal, Shubhankar Potdar, Ritwick Chaudhry, Katerina Fragkiadaki. Track, Check, Repeat: An EM Approach to Unsupervised Tracking. CVPR 2021. [[pdf](#)]
6. **Yiming Zuo\***, Weichao Qiu\*, Lingxi Xie, Fangwei Zhong, Yizhou Wang, Alan Yuille. CRAVES: Controlling Robotic Arm with a Vision-based Economic System. CVPR 2019. [[pdf](#)] [[website](#)]
7. Xuecheng Nie, Jiashi Feng, **Yiming Zuo**, Shuicheng Yan. Human Pose Estimation with Parsing Induced Learner. CVPR 2018. [[pdf](#)]

## Research Experience

**Princeton University, USA**

Sep 2021 - Present

*Ph.D. Candidate with [Prof. Jia Deng](#)*

- Research interests: 3D computer vision, especially 3D scene reconstruction and rendering.

**Carnegie Mellon University, USA**

Aug 2019 - Aug 2021

*Research Assistant to [Prof. Katerina Fragkiadaki](#)*

- Proposed an Expectation-Maximization based approach for unsupervised object discovery and tracking. Our model takes RGBD videos as input, and iteratively finds agreements among modules and trains on pseudo labels.
- One of the main developers of a PyTorch-based 3D learning repository used by everyone in the research group (30+ people).

**Johns Hopkins University, USA and Peking University, China**

Jun 2018 - Dec 2018

*Research Assistant to [Prof. Alan L. Yuille](#) and [Prof. Yizhou Wang](#)*

- Designed a visual servoing system for a low-cost, sensor-free robotic arm based on a single RGB camera. Proposed a novel algorithm for domain adaptation using synthetic data for network training. Demonstrated that our system can accomplish complicated tasks like stacking dices.
- Project website: <https://craves.ai/>

**Research Assistant, National University of Singapore, Singapore**

Aug 2017 - Dec 2017

*Research Assistant to [Prof. Jiashi Feng](#)*

- Trained an hourglass-like neural network for human pose estimation and proposed an improvement on the estimation pipeline structure. Reached the state-of-the-art human pose estimation accuracy on MPII dataset.

## Teaching Experience

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*COS 226 (Algorithms and Data Structures)*, Princeton University, Prof. Kevin Wayne and Prof. Dan Leyzberg, Spring 2023

*COS 451 (Computational Geometry)*, Princeton University, Prof. Bernard Chazelle, Fall 2022

*Media and Cognition*, Tsinghua University, Prof. Shengjin Wang, Fall 2018

## Academic Services

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Reviewer for ECCV24, CVPR 23/24, ICCV 23, ICML 22, ICRA 21/22

## Academic Awards

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- Outstanding Undergraduate (Bachelor's Degree with Honors), top 10% students, Tsinghua University, 2019
- GE Annual Book Prize for the Best Student in Communications, General Electric, Inc, 2018
- TI Book Prize for the Best Student in Digital Signal Processing and Systems, Texas Instrument, Inc, 2018
- Tsinghua Research Excellence Award, top 5%, Tsinghua University, 2018
- Tsinghua Academic Excellence Award, top 5%, Tsinghua University, 2018
- Qualcomm Scholarship (60 among 3000, top 2%), Qualcomm, Inc, 2017
- Wong Lo-Kat Scholarship for Outstanding Academic Performance, Wong Lo-Kat, Inc, 2017
- Scholarship for Outstanding Undergraduates, China Scholarship Council (CSC), 2017
- First Prize, Chinese High School Biology Olympiad, Zoological and Botanical Society of China, 2014

## Technical Skills and English Proficiency

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- Professional experience with deep-learning frameworks (PyTorch)
- Professional skill in 3D engines (especially modeling with Blender)
- Mathematics: Probability theory, Stochastic Process, Complex Analysis, Calculus, Linear Algebra, and Game Theory
- Solid Programming skills with Python. Know how to use C/C++, MATLAB, Java, and Verilog.
- TOEFL 111 (speaking 26), GRE 336 (verbal reasoning 166 + quantitative reasoning 170)