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

3D computer vision, especially novel view synthesis, monocular depth estimation/completion, and large-scale synthesis dataset generation.

Publications

1. **Yiming Zuo** and Jia Deng. OGNI-DC: Robust Depth Completion with Optimization-Guided Neural Iterations. Under review, 2024.
2. Raistrick, A., Lipson, L., Ma, Z., Mei, L., Wang, M., **Yiming Zuo**, ... & Deng, J. Infinite Photorealistic Worlds using Procedural Generation. CVPR 2023. [pdf | website]
3. (**Oral Presentation**) **Yiming Zuo** and Jia Deng. View Synthesis with Sculpted Neural Points. ICLR 2023. [pdf | video]
4. Adam Harley, **Yiming Zuo**, Katerina Fragkiadaki, et al. Track, Check, Repeat: An EM Approach to Unsupervised Tracking. CVPR 2021. [pdf]
5. **Yiming Zuo*,** Weichao Qiu*, Yizhou Wang, Alan L. Yuille, et al. CRAVES: Controlling Robotic Arm with a Vision-based Economic System. CVPR 2019. [pdf | website]
6. Xuecheng Nie, Jiashi Feng, **Yiming Zuo** and 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.

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

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

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

Academic Awards

- 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

- 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)