

YE YUAN

Research Scientist, NVIDIA

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RESEARCH INTERESTS

Fields: Computer Vision, Machine Learning, Robotics

Topics: Physics Simulation, Reinforcement Learning, Generative Models, Embodied Agents, Virtual Humans

EDUCATION

Carnegie Mellon University

Ph.D. in Robotics

Aug 2017 - Present

Advisor: Prof. Kris Kitani

Carnegie Mellon University

M.S. in Computer Science

Aug 2015 - Dec 2016

Advisor: Prof. Stelian Coros

Zhejiang University, China

B.E. in Computer Science and Technology

Aug 2011 - Jun 2015

Advisor: Prof. Kun Zhou

EMPLOYMENT

NVIDIA Research

Research Scientist

May 2022 - Present

Robotics Institute, Carnegie Mellon University

Ph.D. Research Assistant

Aug 2017 - April 2022

Supervisor: Prof. Kris Kitani

Facebook Reality Lab Pittsburgh

Research Intern

May 2020 - Aug 2020

Supervisor: Dr. Jason Saragih

Facebook Reality Lab Pittsburgh

Research Intern

May 2018 - Aug 2018

Supervisors: Dr. Ying Yang and Dr. Yaser Sheikh

Disney Research Pittsburgh

Research Intern

Feb 2017 - Jul 2017

Supervisor: Prof. Stelian Coros

State Key Laboratory of CAD&CG, Zhejiang University

Research Assistant

Jun 2014 - Jul 2015

Supervisor: Prof. Kun Zhou

AWARDS & HONORS

FELLOWSHIPS

NVIDIA Graduate Fellowship (1 of 5 awardees from 350+ applicants worldwide)

2021-2022

Qualcomm Innovation Fellowship (\$100k award, 1 of 13 in North America)

2020-2021

Apple AI/ML Fellowship Nomination (1 of 5 nominees at CMU)

2020

AWARDS

ICLR 2021 Outstanding Reviewer

2021

Fifth place in CMU Annual Parallelism Competition (100+ teams)

2016

Outstanding Undergraduate Thesis of Zhejiang University (Top 1%)

2015

Outstanding Student Research Training Project (SRTP) of Zhejiang University

2014

First Prize in China National Innovative Physics Competition

2013

PREPRINTS

- [1] **All-In-One Drive: A Comprehensive Perception Dataset with High-Density Long-Range Point Clouds**
Xinshuo Weng, Yunze Man, Jinhyung Park, **Ye Yuan**, Matthew O’Toole, Kris Kitani
In Submission, 2021

PUBLICATIONS

- [2] **GLAMR: Global Occlusion-Aware Human Mesh Recovery with Dynamic Cameras**
Ye Yuan, Umar Iqbal, Pavlo Molchanov, Kris Kitani, Jan Kautz
Conference on Computer Vision and Pattern Recognition (CVPR), 2021 (Oral Presentation - Top 4.2%)
- [3] **Transform2Act: Learning a Transform-and-Control Policy for Efficient Agent Design**
Ye Yuan, Yuda Song, Zhengyi Luo, Wen Sun, Kris Kitani
International Conference on Learning Representations (ICLR), 2022 (Oral Presentation – Top 1.6%)
- [4] **Online No-regret Model-Based Meta RL for Personalized Navigation**
Yuda Song, **Ye Yuan**, Wen Sun, Kris Kitani
Learning for Dynamics & Control (L4DC), 2022
- [5] **Dynamics-Regulated Kinematic Policy for Egocentric Pose Estimation**
Zhengyi Luo, Ryo Hachiuma, **Ye Yuan**, Kris Kitani
Advances in Neural Information Processing Systems (NeurIPS), 2021
- [6] **AgentFormer: Agent-Aware Transformers for Socio-Temporal Multi-Agent Forecasting**
Ye Yuan, Xinshuo Weng, Yanglan Ou, Kris Kitani
International Conference on Computer Vision (ICCV), 2021
- [7] **SimPoE: Simulated Character Control for 3D Human Pose Estimation**
Ye Yuan, Shih-En Wei, Tomas Simon, Kris Kitani, Jason Saragih
Conference on Computer Vision and Pattern Recognition (CVPR), 2021 (Oral Presentation – Top 4.2%)
- [8] **PTP: Parallelized 3D Tracking and Prediction with Graph Neural Networks and Diversity Sampling**
Xinshuo Weng*, **Ye Yuan***, Kris Kitani (*Equal Contribution)
IEEE Robotics and Automation Letters (RA-L) and ICRA, 2021 (Best Student Paper Award Candidate – Top 2%)
- [9] **LambdaUNet: 2.5 D Stroke Lesion Segmentation of Diffusion-weighted MR Images**
Yanglan Ou, **Ye Yuan**, Xiaolei Huang, Kelvin Wong, John Volpi, James Z. Wang, Stephen T.C. Wong
International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), 2021
- [10] **Residual Force Control for Agile Human Behavior Imitation and Extended Motion Synthesis**
Ye Yuan, Kris Kitani
Advances in Neural Information Processing Systems (NeurIPS), 2020
- [11] **DLow: Diversifying Latent Flows for Diverse Human Motion Prediction**
Ye Yuan, Kris Kitani
European Conference on Computer Vision (ECCV), 2020
- [12] **Efficient Non-Line-of-Sight Imaging from Transient Sinograms**
Mariko Isogawa, Dorian Yao Chan, **Ye Yuan**, Kris Kitani, Matthew O’Toole
European Conference on Computer Vision (ECCV), 2020
- [13] **Diverse Trajectory Forecasting with Determinantal Point Processes**
Ye Yuan, Kris Kitani
International Conference on Learning Representations (ICLR), 2020

- [14] [Optical Non-Line-of-Sight Physics-based 3D Human Pose Estimation](#)
Mariko Isogawa, **Ye Yuan**, Matthew O'Toole, Kris Kitani
Conference on Computer Vision and Pattern Recognition (CVPR), 2020
- [15] [Generative Hybrid Representations for Activity Forecasting with No-Regret Learning](#)
Jiaqi Guan, **Ye Yuan**, Kris Kitani, Nick Rhinehart
Conference on Computer Vision and Pattern Recognition (CVPR), 2020 (Oral Presentation – Top 5.7%)
- [16] [Back-Hand-Pose: 3D Hand Pose Estimation for a Wrist-worn Camera via Dorsum Deformation Network](#)
Erwin Wu, **Ye Yuan**, Hui-Shyong Yeo, Aaron Quigley, Hideki Koike, Kris Kitani
ACM Symposium on User Interface Software and Technology (UIST), 2020
- [17] [MonoEye: Multimodal Human Motion Capture System Using a Single Ultra-Wide Fisheye Camera](#)
Dong-Hyun Hwang, Kohei Aso, **Ye Yuan**, Kris Kitani, Hideki Koike
ACM Symposium on User Interface Software and Technology (UIST), 2020
- [18] [Semi-Supervised Cervical Dysplasia Classification With Learnable Graph Convolutional Network](#)
Yanglan Ou, Yuan Xue, **Ye Yuan**, Tao Xu, Vincent Pisztor, Jia Li, Xiaolei Huang
International Symposium on Biomedical Imaging (ISBI), 2020
- [19] [Ego-Pose Estimation and Forecasting as Real-Time PD Control](#)
Ye Yuan, Kris Kitani
International Conference on Computer Vision (ICCV), 2019
- [20] [3D Ego-Pose Estimation via Imitation Learning](#)
Ye Yuan, Kris Kitani
European Conference on Computer Vision (ECCV), 2018
- [21] [Computational Design of Transformables](#)
Ye Yuan, Changxi Zheng, Stelian Coros
ACM SIGGRAPH/Eurographics Symposium on Computer Animation (SCA), 2018
- [22] [Interactive Co-Design of Form and Function for Legged Robots using the Adjoint Method](#)
Ruta Desai, Beichen Li, **Ye Yuan**, Stelian Coros
International Conference on Climbing and Walking Robots (CLAWAR), 2018
- [23] [Computational Abstractions for Interactive Design of Robotic Devices](#)
Ruta Desai, **Ye Yuan**, Stelian Coros
IEEE International Conference on Robotics and Automation (ICRA), 2017
- [24] [Interacting with Intelligent Characters in AR](#)
Gokcen Cimen, **Ye Yuan**, Robert W Sumner, Stelian Coros, Martin Guay
Artificial Intelligence Meets Virtual and Augmented Worlds (AIVRAR), 2017
- [25] [Continuous Optimization of Interior Carving in 3D Fabrication](#)
Yue Xie, **Ye Yuan**, Xiang Chen, Changxi Zheng, Kun Zhou
Frontiers of Computer Science, 2017

PATENTS

- [26] [Automatically Generating Quadruped Locomotion Controllers](#)
Martin Guay, Moritz Geilinger, Stelian Coros, **Ye Yuan**, Robert Walker Sumner
US Patent No. 10553009, 2020
- [27] [Modeling Interactions Between Simulated Characters and Real-World Objects for More Realistic Augmented Reality](#)
Martin Guay, Gökçen Çimen, Dominik Tobias Borer, Simone Guggiari, **Ye Yuan**, Stelian Coros, Robert Walker Sumner
US Patent No. 10445940, 2019

ACADEMIC TALKS

INVITED TALKS

Invited Speaker at MPI, Perceiving Systems Department	2022
Invited Speaker at ETH Zurich, Computer Vision and Learning Group	2021
Invited Speaker at University of Alabama, Machine Learning and Optimal Control Class	2021
Invited Speaker at 16th CSL student conference	2021
Invited Speaker at UIUC, Robotics Seminar	2021
Invited Speaker at Wayve	2020
Invited Speaker at Qualcomm	2020

PROFESSIONAL SERVICE

ORGANIZER

Co-Organizer, IJCAI 2021 Workshop on Artificial Intelligence for Autonomous Driving	2021
Co-Organizer, IROS 2021 Workshop on Multi-Agent Interaction and Relational Reasoning	2021

CONFERENCE REVIEWER

NeurIPS, ICML, ICLR, CVPR, ICCV, ECCV, AAAI, ICRA, SIGGRAPH, Eurographics

JOURNAL REVIEWER

JMLR, TMLR, TPAMI, TIP, RA-L

UNIVERSITY ACTIVITY

PhD Speaking Qualifier Committee, PhD in Robotics, Erica Weng	2022
Thesis Committee, MS in Robotics, Zhengyi Luo	2021
Thesis Committee, MS in Robotics, Scott Sun	2020
Thesis Committee, MS in Robotics, Tanya Marwah	2019

RESEARCH MENTORING

GRADUATE STUDENTS

Erica Weng (CMU RI PhD)	2022 - Present
Zhengyi Luo (CMU MSR, now PhD at CMU RI)	2020 - Present
Yuda Song (CMU MSML)	2021 - Present
Shun Iwase (CMU MSR, now PhD at CMU RI)	2021 - Present
Xuhua Huang (CMU MSCV)	2021
Sandy Sun (CMU MS Robotics, now at Amazon)	2020
Scott Sun (CMU MS Robotics, now at Amazon)	2020
Erwin Wu (Tokyo Tech PhD)	2020
Dong-Hyun Hwang (Tokyo Tech PhD)	2019
Ryo Hachiuma (Keio University PhD)	2019
Jiaqi Guan (UIUC PhD)	2018-2019
Tanya Marwah (CMU MS Robotics, now PhD at CMU MLD)	2018-2019

INDUSTRY VISITORS

TEACHING

TEACHING ASSISTANCE

Computer Vision (16-720), CMU. Instructor: Srinivasa Narasimhan Spring 2020

Computer Vision (16-385), CMU. Instructors: Kris Kitani & Srinivasa Narasimhan Fall 2019

GUEST LECTURER

Computer Vision (16-720), CMU. Variational Inference and VAE Fall 2020