Xiaohang Yu

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EDUCATION

Master of Engineering in Computer Science September 2021 - July 2024
Tsinghua University, Beijing, China
Overall GPA: 3.87/4.0
Advisor: Prof. Qionghai Dai

Bachelor of Communication Engineering of Honors Program September 2017 - June 2021
China Agricultural University, Beijing, China
Overall GPA: 3.72/4.0 **Ranking:** top 5%

PUBLICATIONS

3D Representation

Xiaohang Yu, Haoxiang Wang, Yuqi Han, Lei Yang, Tao Yu, Qionghai Dai. *ImmersiveNeRF: Hybrid Radiance Fields for unbounded Immersive Light Field Reconstruction.* IEEE Transactions on Visualization and Computer Graphics (TVCG) 2023, under review. [arXiv]

Yuqi Han, **Xiaohang Yu**, Tao Yu. *Acquisition, Representation, and Application of Immersive Light Field.* Communications of Chinese Association for Artificial Intelligence (CAAI) 2023.

Yuqi Han, Tao Yu, **Xiaohang Yu**, Yuwang Wang, Qionghai Dai. *Super-NeRF: View-consistent Detail Generation for NeRF Super-resolution.* [arXiv]

Hui Qiao, Haoxiang Wang, **Xiaohang Yu**, Tao Yu, Qionghai Dai. *ES-NeRF: Efficient Sampling for Dynamic Radiance Fields.* Under submission.

Object Tracking

Yuqi Han, **Xiaohang Yu**, Heng Lua, Jinli Suo. *Event-Assisted Object Tracking on High-Speed Drones under Harsh Illumination Environment.* MDPI Drones, Nov. 2023, under review. [Preprints]

RESEARCH EXPERIENCE

Metaverse AI Group in Tsinghua University Janurary 2022 - Present
led by Prof. Tao Yu, and Prof. Qionghai Dai

- Combined traditional and neural 3D reconstruction methods and representation, aimed to reconstruct statics and dynamic light field and realize photorealistic novel view synthesis and 6DOF immersive experience in VR/AR headset for unbounded scenes.
- Proposed a hybrid radiance field representation for unbounded immersive light field reconstruction
- Collected an outdoor immersive light field dataset THUimmersive to encourage extra-large scale 6DOF immersive rendering performance.
- Proposed a generative NeRF super-resolution method for view-consistent and high-resolution novel view synthesis with low-resolution image input.
- Proposed a novel framework for dynamic radiance field reconstruction in an incremental manner.

Agricultural Informatization Group in China Agricultural University December 2020 - May 2021
led by Prof. Xiang Li

- Aimed to digitalize agricultural production processes, focusing on the recognition and identification of crop diseases and also farmers' labor behavior from images and videos.
- Collected farmer working video dataset.

· Formulated farmers' labor behavior recognition as a spatiotemporal video classification problem, and proposed an end-to-end network to recognize farmers' working behavior from monocular videos.

PROJECTS

AI Coach for Divers [paper] December 2021

major project as a part of curriculum

· A smart AI Coach to help scuba divers to master the skill.
· Extracted motion and breath features from videos recorded in a deep-diving pool.
· Established a simulation environment for training coaching agents.
· Investigated the application in the actual environment.

Estimation of Global Plastic Waste Level February 2020

Honorable Mention of Mathematical Contest in Modeling

· Estimated the maximum level of plastic product waste considering the estimated environmental health in analysis of regression.
· Estimated the minimum level of plastic product waste confined to the consumption demand which varies from country to country.
· Quantized each country's ability and duty in dealing with plastic waste through an evaluation system, and formulated different sets of strategy for different levels.

Mathematical Modeling and Analysis of a Tube Pressure Control Scheme October 2019

First Prize of National Mathematical Contest in Modeling

· Modeled a 2-DOF system considering inlet and outlet of the high pressure oil pipe.
· Minimized the displacement of tube pressure and derived the boundary conditions from physical analysis in the tube.
· Solved the numerical solution of the programming model.

INTERNSHIP

Quality Engineer Developer Internship
Kingsoft Office, Beijing June 2020

ACHIEVEMENTS

Scholarship for Excellent Academic Performances (Top 5%) thrice	*2018, 2019, 2020*
Mathematical Contest in Modeling (MCM/ICM), Honorable Mention	*2020*
National Mathematics Competition for College Students, First Prize	*2019*
National Mathematical Contest in Modeling for College Students, First Prize	*2019*
Renewable Energy Technology Competition, Second Prize	*2018*
National English Competition for College Students, First Prize	*2018*

SERVICES

Academic Services	Reviewer for CICAI 2023; Student Volunteer for Robot Challenge 2019.
Outreach and Leadership	Captain of DK5s dance club in Tsinghua University

SKILLS

Programming Languages	Proficiency in Python; Familiar with C, C++, Matlab, Blender, Unity.
Extracurriculars	Tennis (won bronze medal in Wilson Ace Girl 2023), Jazz, Swimming, Violin.
Language	TOEFL 101 (Reading: 24; Listening: 27; Speaking: 23; Writing: 27)