LICHENG ZHONG

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EDUCATION

Bachelor of Mechanical Engineering, Shanghai Jiao Tong University — Sept 2020 - Present
Intern and Research, Machine Vision and Intelligence Group (MVIG) @ SJTU — Jan 2022 - Present
Intern and Research, Stanford Vision and Learning Lab (SVL) @ Stanford — Jun 2023 - Present
Sophomore major GPA: 3.87/4.3

PUBLICATION

[1] **Licheng Zhong**, Lixin Yang, Kailin Li, Haoyu Zhen, Mei Han, and Cewu Lu. Color-NeuS: Reconstructing neural implicit surfaces with color. In *International Conference on 3D Vision (**3DV**)*, 2024.

[2] Lixin Yang, Jian Xu, **Licheng Zhong**, Xinyu Zhan, Zhicheng Wang, Kejian Wu, and Cewu Lu. POEM: Reconstructing hand in a point embedded multi-view stereo. In *Computer Vision and Pattern Recognition (**CVPR**)*, 2023.

[3] Kailin Li, Lixin Yang, Haoyu Zhen, Zenan Lin, Xinyu Zhan, **Licheng Zhong**, Jian Xu, Kejian Wu, and Cewu Lu. CHORD: Category-level in-hand object reconstruction via shape deformation. In *International Conference on Computer Vision (**ICCV**)*, 2023.

[4] **Licheng Zhong**, Jin Ma, Yizhou Li, and Guoxing Liu. Exploring the use of convolutional neural network to surgical stapler design. In *Journal of Shanghai Jiaotong University (Science)*.

[5] Xinbei Wang*, Zexuan Yan*, and **Licheng Zhong***. Centralized and decentralized methods for multi-robot safe navigation. In *2022 International Conference on Machine Learning and Intelligent Systems Engineering (MLISE)*, 2022.

REASERCH EXPERIENCE

Physics Informed Short-term Prediction from Multi-view Images — Jun 2023 - Present
Advisor: *Jiajun Wu, Assistant Professor, Computer Science Department, Stanford University*
Yunzhu Li, Assistant Professor, Computer Science Department, University of Illinois Urbana-Champaign

- Designed a short-term prediction method from multi-view images with physics knowledge informed.

- Incorporated our simulation methods into 3D Gaussian Splatting representation to reconstruct dynamic physical processes.

- Compared with other representation and simulation methods, such as NeRF + Material Points Method.

Reconstructing Implicit Surface with Color — Jan 2023 - Aug 2023
Advisor: *Cewu Lu, Professor of AI Institute, Computer Science Department, Shanghai Jiao Tong University*
Lixin Yang, Research Assistant Professor, Computer Science Department, Shanghai Jiao Tong University

- Proposed Color Neural Implicit Surface (**Color-NeuS**) for mesh reconstruction with color. Project Page

- Removed view-dependent color while using a relighting network to maintain volume rendering performance.

- Extracted mesh from the Signed Distance Field (SDF) network, derived vertex color from the global color network.

- Constructed a video test set (**IHO Video**) to evaluate Color-NeuS.

- Contributed a **first author** paper [1] accepted by **3DV 2024**.

Hand-Object Reconstruction and Interaction — July 2022 - March 2023
Advisor: *Cewu Lu, Professor of AI Institute, Computer Science Department, Shanghai Jiao Tong University*
Lixin Yang, Research Assistant Professor, Computer Science Department, Shanghai Jiao Tong University

- Proposed **POEM** (3D **PO**ints **E**mbedded in the **M**ulti-view stereo) for multi-view reconstruction. Project Page

- POEM utilized a cluster of (x, y, z) coordinates with natural positional encoding to find associations in multi-view stereo.

- Proposed a new method **CHORD** for intra-class objects reconstruction. Project Page

- Constructed a new dataset, **COMIC**, of category-level hand-object interaction. COMIC encompassed a diverse collection of object instances, materials, hand interactions, and viewing directions.

- Contributed to a co-author paper [2] accepted by **CVPR 2023** and a co-author paper [3] accepted by **ICCV 2023**.

SKILLS AND AWARDS

Programming skills: Python, Pytorch, C/C++, Matlab, Linux
2020-2021 Undergraduate Excellence Scholarship
2021-2022 COSCO Scholarship
2021 National College Students Physics Experiment Competition (Innovation) Second prize