

# LICHENG ZHONG

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## EXPERIENCE

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<b>Bachelor of Mechanical Engineering</b> , Shanghai Jiao Tong University	Sept 2020 - Jun 2024
<b>Research Assistant</b> , <a href="#">Machine Vision and Intelligence Group (MVG)</a> @ SJTU	Jan 2022 - Present
<b>Research Intern</b> , <a href="#">Stanford Vision and Learning Lab (SVL)</a> @ Stanford	Jun 2023 - Mar 2024
<b>Research Assistant</b> , <a href="#">Shanghai Qi Zhi Institute</a>	Mar 2024 - Present

## PUBLICATION

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- [1] **Licheng Zhong**, Hong-Xing Yu, Jiajun Wu, and Yunzhu Li. Reconstruction and simulation of elastic objects with spring-mass 3d gaussians. *European Conference on Computer Vision (ECCV)*, 2024.
- [2] **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.
- [3] 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.
- [4] 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.
- [5] Lixin Yang, **Licheng Zhong**, Pengxiang Zhu, Xinyu Zhan, Junxiao Kong, Jian Xu, and Cewu Lu. Multi-view hand reconstruction with a point-embedded transformer. *arXiv preprint arXiv:2408.10581*, 2024.

## REASERCH EXPERIENCE

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**Physics Informed Deformable Object Reconstruction and Simulation** Jun 2023 - Mar 2024

Advisor: *Jiajun Wu, Assistant Professor, Computer Science Department, Stanford University*

*Yunzhu Li, Assistant Professor, Computer Science Department, University of Illinois Urbana-Champaign*

- Proposed **Spring-Gaus**, a 3D object representation for elastic objects reconstruction and simulation. [Project Page](#)
- Incorporated a 3D Spring-Mass model for simulating object deformation, enabling the optimization of physical parameters at the individual point level while decoupling the learning of physics and appearance.
- Acquired simulatable digital assets from observations, which can be resimulated in new environments or new boundary conditions. Evaluated on both synthetic and real-world data.
- Contributed a **first author** paper [1] accepted by *ECCV 2024*.

**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 [2] accepted by *3DV 2024*.

**Hand-Object Reconstruction and Interaction** Jul 2022 - Mar 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 [3] accepted by *CVPR 2023* and a co-author paper [4] accepted by *ICCV 2023*.
- Contributed to a co-author paper [5] submitted to *TPAMI* (under review).