

# XIAOMENG XU

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## EDUCATION

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Stanford University

09/2023-now

*PhD Student in Electrical Engineering*

Tsinghua University

08/2019-06/2023

*Bachelor of Engineering in Automation, Bachelor of Arts in Product Design*

**GPA:** 3.96/4.00, **Rank:** 1/21

## PUBLICATIONS

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1. **Xiaomeng Xu**, Yanchao Yang, Kaichun Mo, Boxiao Pan, Li Yi, Leonidas Guibas, *JacobiNeRF: NeRF Shaping with Mutual Information Gradients*. Conference on Computer Vision and Pattern Recognition (CVPR 2023). [Paper]
2. **Xiaomeng Xu\***, Yun Liu\*, Weihang Chen, Haocheng Yuan, He Wang, Jing Xu, Rui Chen, Li Yi, *Enhancing Generalizable 6D Pose Tracking of an In-Hand Object with Tactile Sensing*. Robotics and Automation Letters (RAL-2023). [arXiv]
3. Xueyi Liu, **Xiaomeng Xu**, Anyi Rao, Chuang Gan, Li Yi, *AutoGPart: Intermediate Supervision Search for Generalizable 3D Part Segmentation*. Conference on Computer Vision and Pattern Recognition (CVPR 2022). [Paper]
4. Guan hong Liu, Tianyu Yu, Zhihao Yao, Haiqing Xu, Yunyi Zhang, Xuhai Xu, **Xiaomeng Xu**, Mingyue Gao, Qirui Sun, Tingliang Zhang, Haipeng Mi, *ViviPaint: Creating Dynamic Painting with a Thermochromic Toolkit*. Multimodal Technologies and Interaction (MTI 2022). [Paper]

\* authors with equal contribution

## RESEARCH EXPERIENCES

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**Hand-Deformable Object Interaction Capturing**

02/2023-now

*3D Vision, Graphics*

*Supervisor: Prof. Li Yi, Tsinghua University*

- Proposed a novel hardware system and annotation algorithm that enable the capture of high-quality hand-deformable object interaction data.

**NeRF Shaping with Mutual Information Gradients**

06/2022-11/2022

*3D Vision, Machine Learning*

*Supervisor: Prof. Leonidas Guibas, Stanford University*

- Chinese Undergraduate Visiting Research Program (UGVR)
- Proposed shaping a NeRF to encode mutual correlations of a scene via aligning jacobians. And demonstrated applications in label propagation for semantic and instance segmentation.

**Enhancing 6D Pose Tracking of an In-Hand Object with Tactile Sensing** 12/2021-09/2022

*3D Vision, Robotics*

*Supervisor: Prof. Li Yi, Tsinghua University*

- Presented a tactile-enhanced 6D pose tracking framework to track previously unseen in-hand objects.

**Generalizable 3D Part Segmentation**

09/2021-11/2021

*3D Vision, Machine Learning*

*Supervisor: Prof. Li Yi, Tsinghua University*

- Proposed a generic method that improves the generalizability of 3D part segmentation networks by searching for optimal supervisions automatically.

## Thermochromic Toolkit for Creating Dynamic Painting

10/2020-04/2021

*Human Computer Interaction*

*Supervisor: Prof. Haipeng Mi, Tsinghua University*

- Presented a toolkit consisting of a design tool and a set of hardware components that assists artists and enthusiasts in creating thermochromic paintings.

## AWARDS

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Outstanding Graduate of Tsinghua University (Awarded to top 2% Tsinghua graduates)	06/2023
Outstanding Graduate of Beijing (Awarded to top 5% Beijing graduates)	06/2023
Academic Contribution Award (Awarded to graduates with academic achievements, top 5%)	06/2023
Comprehensive Excellence Award (Scholarship awarded by Tsinghua University, top 5%)	10/2022
National Scholarship (Highest scholarship awarded by Chinese Government, top 0.1%)	10/2021
129 Scholarship (Highest scholarship for sophomores in Tsinghua University, top 1%)	10/2020
Innovation Award of Science and Technology (Awarded to undergraduates with excellent research potentials, top 5%)	10/2020-2022

## EXTRACURRICULAR ACTIVITIES

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Drop-in Tutoring	10/2020-10/2022
Tutoring volunteer for engineering drawing, programming, electric circuits, physics, calculus, etc.	
Siyuan Leadership Program	10/2020-now
A leadership program that selects the top 1% Tsinghua undergraduates, emphasizing the cultivation of social practice abilities and international perspectives.	

## LANGUAGE SKILLS

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<b>TOEFL iBT</b>	111/120 (Reading 29, Listening 29, Speaking 25, Writing 28)
<b>IELTS</b>	8.0/9.0 (Reading 9.0, Listening 9.0, Speaking 7.0, Writing 7.5)

## TECHNICAL SKILLS

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<b>Computer Languages</b>	Python, C/C++, MATLAB, Verilog/VHDL
<b>Software</b>	SolidWorks, AutoCAD, Rhino, Qt Creator, Multisim, Quartus
<b>Hardware</b>	3D Printing, FPGA, Microcontroller, mechanical design, woodcraft
<b>Tools</b>	PyTorch, ROS, Git, Linux, L <sup>A</sup> T <sub>E</sub> X