

# Xuanlin (Simon) Li

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## EDUCATION

**University of California - San Diego**

PhD in Computer Science and Engineering, 2021 - now

Advisor: Prof. Hao Su

**University of California - Berkeley**

B.A. Computer Science (honors) & Mathematics (honors), 2017-2021

Technical GPA: 4.0

## EXPERIENCE

- **UC San Diego Center for Visual Computing & Contextual Robotics Institute** La Jolla, CA  
*PhD Student & Researcher* Sep 2021 - Now
  - Primary interests: **Embodied AI, Vision-Language, Robotics**. In particular, I'm interested in building (2D/3D) vision-language models and policies with generic perception and reasoning capabilities. When combined with large-scale robotic learning systems, this empowers robots to acquire generalizable skills and excel in diverse task scenarios.
- **Qualcomm AI Research** San Diego, CA  
*Research Intern* Mar 2023 - Now
  - Worked on situated real-time interactions with large language models via multimodal (vision-audio) stream conditioning.
- **Berkeley Artificial Intelligence Research** Berkeley, CA  
*Undergraduate Researcher* Mar 2019 - May 2021
  - Advised by Prof. Trevor Darrell. Worked on non-monotonic sequence generation on vision & language tasks, reinforcement learning, and neural network architecture learning.

## PUBLICATIONS (\* = EQUAL CONTRIBUTION)

As of Aug. 2023

- **OpenShape: Scaling Up 3D Shape Representation Towards Open-World Understanding**  
M. Liu\*, R. Shi\*, K. Kuang\*, Y. Zhu, **X. Li**, S. Han, H. Cai, F. Porikli, H. Su  
NeurIPS 2023  
Category: Vision-Language
- **Deductive Verification of Chain-of-Thought Reasoning**  
Z. Ling\*, Y. Fang\*, **X. Li**, Z. Huang, M. Lee, R. Memisevic, H. Su  
NeurIPS 2023  
Category: Language
- **Situated Real-time Interaction with a Virtually Embodied Avatar**  
S. Panchal, G. Berger, A. Mercier, C. Bohm, F. Dietrichkeit, **X. Li**, R. Pourreza, P. Madan, A. Bhattacharyya, M. Lee, M. Todorovich, I. Bax, R. Memisevic  
CVPR 2023 Embodied AI Workshop (Preprint)  
Category: Vision-Language, Embodied AI
- **Distilling Large Vision-Language Model with Out-of-Distribution Generalizability**  
**X. Li**\*, Y. Fang\*, M. Liu, Z. Ling, Z. Tu., H. Su  
ICCV 2023  
Category: Vision-Language, Embodied AI
- **Reparameterized Policy Learning for Multimodal Trajectory Optimization**  
Z. Huang, L. Liang, Z. Ling, **X. Li**, C. Gan, H. Su  
ICML 2023 (Oral)  
Category: Robotics, Embodied AI
- **On the Efficacy of 3D Point Cloud Reinforcement Learning**  
Z. Ling\*, Y. Yao\*, **X. Li**, H. Su  
Preprint  
Category: Vision, Embodied AI, Robotics
- **Frame Mining - A Free Lunch for Learning Robotic Manipulation from 3D Point Clouds**  
M. Liu\*, **X. Li**\*, Z. Ling\*, Y. Li, H. Su  
CoRL 2022  
Category: Vision, Embodied AI, Robotics
- **ManiSkill2: A Unified Benchmark for Generalizable Manipulation Skills**  
J Gu<sup>+</sup>, F. Xiang<sup>+</sup>, **X. Li**\*, Z. Ling\*, X. Liu\*, T. Mu\*, Y. Tang\*, S. Tao\*, X. Wei\*, Y. Yao\*, X. Yuan, P. Xie, Z. Huang, R. Chen, H. Su  
ICLR 2023  
Category: Vision, Embodied AI, Robotics
- **ManiSkill: Generalizable Manipulation Skill Benchmark with Large-Scale Demonstrations**  
T. Mu\*, Z. Ling\*, F. Xiang\*, D. Yang\*, **X. Li**\*, S. Tao, Z. Huang, Z. Jia, H. Su  
NeurIPS 2021  
(Dataset & Benchmarks Track)  
Category: Vision, Embodied AI, Robotics

- **Improving Policy Optimization with Generalist-Specialist Learning**

Z. Jia, **X. Li**, Z. Ling, S. Liu, Y. Wu, H. Su

ICML 2022

Category: Robotics, Embodied AI

- **Discovering Non-Monotonic Autoregressive Orderings with Variational Inference**

**X. Li\***, B. Trabucco\*, D.H. Park, Y. Gao, M. Luo, S. Shen, T. Darrell

ICLR 2021

Category: Vision-Language

- **Regularization Matters in Policy Optimization - An Empirical Study on Continuous Control**

Z. Liu\*, **X. Li\***, B. Kang, T. Darrell

ICLR 2021 (Spotlight)

Category: Robotics

## HONORS AND AWARDS

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- Jacobs School of Engineering PhD Fellowship, UC San Diego, 2021
- Arthur M. Hopkin Award, UC Berkeley EECS, 2021

## TECHNICAL SKILLS

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- **Languages:** Python, Java, C/C++, Bash, LaTeX, Golang, HTML/CSS
- **Libraries / Softwares:** PyTorch, Tensorflow, Numpy/Scipy/Pandas/Matplotlib/Scikit-learn, Jax, Open3D/Trimesh, Blender
- **Developer Tools:** Git, Docker, Kubernetes, Vim, VSCode
- **Selected CourseWork:**
  - Graduate: Computer Vision, ML for 3D Geometry, Deep Unsupervised Learning, ML for Robotics, Deep Reinforcement Learning, Advanced Robotics, Natural Language Processing, Theoretical Statistics, Topology and Real Analysis, Functional Analysis
  - Undergraduate: Machine Learning, Operating Systems, Probability Theory and Random Processes, Optimization, Algorithms, Data Structures, Machine Structures, Real Analysis, Linear Algebra, Abstract Algebra, Complex Analysis, Numerical Analysis, Differential Geometry, PDE

## SERVICE

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- **Reviewer:**
  - Computer Vision: CVPR'22'23, ECCV'22, ICCV'23
  - Machine Learning: NeurIPS'22'23, ICML'22'23, ICLR'22'24
- **Teaching Assistant:** Fall 2022 UCSD CSE 291 - ML for 3D Geometry