

# Siting Li

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## Education

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### University of Washington

*Ph.D., advised by Prof. Simon S. Du*

Sep. 2023 – Present

Paul G. Allen School of Computer Science & Engineering

### Tsinghua University

*B.Eng in Computer Science (Yao class)*

Sep. 2019 – Jun. 2023

Institute for Interdisciplinary Information Sciences

- Overall GPA: 3.78/4.0

## Research experiences

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### Towards Understanding Multi-modal Contrastive Learning

Feb. 2022 – Present

*Mentor: Professor Simon S. Du (University of Washington)*

- Built the theoretical framework for multi-modal contrastive learning by analyzing the gradient flow dynamics. Designed and tested regularizers for improving the quality of learned representations.

### Towards Understanding Multi-modal Robustness from an Information-Theoretical View

Jul. 2021 – Jun. 2023

*Mentor: Professor Hang Zhao (Tsinghua University)*

- Proposed an information-theoretical framework to explain the discrepancy among previous conclusions on multi-modal robustness. Designed and tested a metric and its calculating pipeline based on mutual information for evaluating modality complementarity on multi-modal datasets.
- Summary of findings available [here](#).

### Difference-in-Differences: Bridging Normalization and Disentanglement in PG-GAN

Jul. 2020 – Jul. 2021

*Mentor: Professor Yang Yu (Tsinghua University)*

- Conducted experiments and plotted graphs to verify the DID counterfactual framework which clarifies the mechanisms how pixel normalization causes PG-GAN entanglement.
- Summary of findings available [here](#).

## Selected projects

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### Real Image Editing on User-Specified Semantics by GAN Inversion model

Feb. 2021 – Jul. 2021

*2021 Spring Computer Vision course project*

- Implemented a compact application to find user-defined semantic directions in GAN's latent space and do real image editing, taking advantage of pre-trained GANs and corresponding inversion models. See our codes [here](#) and final report available [here](#).

### Photon Mapping

Dec. 2021 – Jan. 2022

*2021 Fall Advanced Computer Graphics course project*

- Implemented the photon mapping algorithm and other functions including anti-aliasing, texture mapping, KD-Tree and so on. See the codes and results [here](#).

### Bayesian Stackelberg Game Model for Multi-Objective Inspection

Feb. 2023 – Jun. 2023

*2023 Spring Game theory course project*

- Use Bayesian Stackelberg Game for modeling and derive the best fare inspection and safety patrol strategies in the LA Metro Rail System in Matlab. See the codes and final report [here](#).

## Honors and scholarships

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Paul G. Allen First-Year Graduate Student Fellowship, Univ. of Washington	2023
Volunteer Excellence Scholarship, IIIS, Tsinghua University	2022
Spark Scientific and Technological Innovation Fellowship, Tsinghua University	2021
• top 1% of 3800+ Tsinghua '23 undergraduate students for outstanding research performance	
Sports Excellence Scholarship, IIIS, Tsinghua University	2021
Silver Medal (Rank 21/318) in China Collegiate Programming Contest (Regional, Harbin)	2021
Gold Medal in National Olympiad in Informatics (Invitational)	2018
First Prize in National Olympiad in Informatics in Provinces	2016,2017

## Service and leadership

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Council Member of Spark Innovative Talent Cultivation Program	Sept. 2021 – Jun. 2023
• Worked on the review committee of the Spark Fellowship and was an organizer of Spark Days.	
Member of Class Committee, Yao Class 92	Sept. 2020 – Jun. 2023
Member of Beijing Volunteer Service Federation	Sept. 2019 – Jun. 2023
• <a href="#">118.5 hours of recorded volunteer experience</a>	

## Skills

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**Languages** : Python, C/C++, Go, Matlab, LaTeX, SQL, Verilog

**Framework** : Pytorch

**Languages** : Chinese (Native), English (TOEFL 110 (R30+L29+W28+S23); GRE 332 (V162+Q170) + AW4.0)

## Preprints

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1. Siting Li, Chenzhuang Du, Yue Zhao, Yu Huang, Hang Zhao: What Makes for Robust Multi-Modal Models in the Face of Missing Modalities? CoRR abs/2310.06383 (2023)
2. Zhengqi Gao, Sucheng Ren, Zihui Xue, Siting Li, Hang Zhao: Training-Free Robust Multimodal Learning via Sample-Wise Jacobian Regularization. CoRR abs/2204.02485 (2022)
3. Xiao Liu, Jiajie Zhang, Siting Li, Zuotong Wu, Yang Yu: Difference-in-Differences: Bridging Normalization and Disentanglement in PG-GAN. CoRR abs/2010.08402 (2020)