Siting Li

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Education

Tsinghua University Sep. 2019 – Present

B.Eng in Computer Science (Yao Class, website here) IIIS, Tsinghua University

- Current GPA: 3.74
- Selected Courses: Mathematics for Computer Science, Theory of Computation, Machine Learning.

Research experiences

Towards Understanding Multi-modal Contrastive Learning Feb. 2022 – Present

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

- Plan to build the theoretical framework for multi-modal contrastive learning by analyzing the gradient flow dynamics. Plan to design a regularizer for improving the quality of learned representations.

Towards Understanding Multi-modal Robustness from an Information-Theoretical View Jul. 2021 – Present

Mentor: Professor Hang Zhao (Tsinghua University)

- Proposed an information-theoretical framework to explain the discrepancy among previous conclusions on multi-modal robustness. Designed a metric and its calculating pipeline based on mutual information for evaluating various multimodal datasets in terms of modality complementariness.

Difference-in-Differences: Bridging Normalization and Disentanglement in PG-GAN Jul. 2020 – Present

Mentor: Professor Yang Yu (Tsinghua University)

- Proposed a DID counterfactual framework to clarify the mechanisms how pixel normalization causes PG-GAN entanglement. Also demonstrated the huge potential of causal methods for explaining and controlling network behaviors. Summary of findings available here.

Selected projects

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 here.

Honors and scholarships

Selected to Spark Scientific and Technological Innovation Fellowship, Tsinghua University 2021

Sports Excellence Scholarship, Tsinghua University 2021

Silver Medal (Rank 21/318) in CCPC Regional Contest (Harbin) 2021

Xuetang Scholarship, Tsinghua University 2020

Gold Medal in National Olympiad in Informatics (Invitational) 2018

First Prize in National Olympiad in Informatics in Provinces 2016,2017

Service and outreach

Council Member of Spark Innovative Talent Cultivation Program Sept. 2021 – Present

Member of Beijing Volunteer Service Federation Sept. 2019 – Present

- 90.5 hours of recorded volunteer experience

Member of Tsinghua University Student Association For Brain Science Sept. 2019 – Present

Skills

Languages : Python, C/C++, Matlab, LaTeX, SQL, Verilog
Framework : Pytorch
Languages : Chinese, English