Muchen Li

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EDUCATION

University of British Columbia (UBC), Vancouver, Canada *Sep 2021 - Present*
PhD in Computer Science
Supervisor: Prof. Leonid Sigal & Prof. Renjie Liao
GPA: 94/100

Huazhong University of Science and Technology (HUST), Hubei, China *Sep 2015 – June 2019*
B.Eng in Computer Science and Engineering
GPA: 3.95/4.0

EXPERIENCE

Shanghai Jiao Tong University, MVIG, Shanghai *Sep 2019 - June 2020*
Research Assistant
Video Tracking. (supervised by Prof. Cewu Lu)

University of British Columbia, Vision Lab, Vancouver *Sep 2020 - Present*
Research Assistant
Reasoning with LLMs and VLMs. (supervised by Prof. Renjie Liao and Prof. Leonid Sigal)

Meta Reality Lab, Redmond, USA *July 2023 - Nov 2023*
Research Intern
Generative Model for 3D Hand-Object Interaction. (supervised by Dr. Shugao Ma)

PUBLICATIONS & MANUSCRIPT

- **Muchen Li**, Leonids Sigal, Renjie Liao. *Scaling memory module for efficient language modeling.* Under Preparation

- Jia Jun Cheng Xian*, **Muchen Li***, Haotian Yang, Xin Tao, Pengfei Wan, Leonid Sigal, Renjie Liao. *Free Lunch Alignment of Text-to-Image Diffusion Models without Preference Image Pairs.* In submission.

- Wenlong Deng, Yi Ren, **Muchen Li**, Danica J. Sutherland, Xiaoxiao Li, Christos Thrampoulidis. *On the Effect of Negative Gradient in Group Relative Deep Reinforcement Optimization.* NeurIPs 2025

- Qihang Zhang, **Muchen Li**, Ziao Wang, Renjie Liao, Lele Wang. *Neural OOD Text Compression via Test-Time Steering with Weighted Product of Experts.* EMNLP 2025

- **Muchen Li***, Sadegh Mahdavi*, Kaiwen Liu, Christos Thrampoulidis, Leonid Sigal, Renjie Liao. *AOPS Dataset: Leveraging Online Olympiad-Level Math Problems for LLMs Training and Contamination-Resistant Evaluation.* ICML 2025

- Sadegh Mahdavi, **Muchen Li**, Kaiwen Liu, Renjie Liao, Christos Thrampoulidis. *Beyond Accuracy: A Policy Gradient Reweighting Approach for Pass@K Maximization in LLMs.* 2nd AI for Math Workshop@ ICML 2025

- **Muchen Li**, Sammy Christen, Chengde Wan, Yujun Cai, Leonid Sigal, Renjie Liao, Shugao Ma. *LatentHOI: On the Generalizable Hand Object Motion Generation with Latent Hand Diffusion.* CVPR 2025

- Xue Yu, **Muchen Li**, Yan Leng, Renjie Liao. *Learning Latent Structures in Network Games via Data-Dependent Gated-Prior Graph Variational Autoencoders.* ICML 2024

- **Muchen Li**, Jeferrey Liu, Leonid Sigal, Renjie Liao. *GraphPNAS: Learning Distribution of Good Neural Architectures via Deep Graph Generative Models.* TMLR 2023

- **Muchen Li**, Leonid Sigal. *Referring Transformer: A One-step Approach to Multi-task Visual Grounding.* NuerIPs 2021
- Bo Pang, Yizhuo Li, Jiefeng Li, **Muchen Li**, Hanwen Cao, Cewu Lu. *TDAF: Top-Down Attention Framework for Vision Tasks.* AAAI 2020
- Bo Pang, Yizhuo Li, **Muchen Li**, Yifan Zhang, Cewu Lu. *TubeTK: Adopting Tubes to Track Multi-Object in a Unified One-Step Model.* CVPR 2020, Oral
- Xiangyu Xu, **Muchen Li**, Wenxiu Sun. *Learning Spatial and Spatio-Temporal Pixel Aggregations for Image and Video Denoising.* TIP 2020

OTHER PROJECTS

CVPR2020 NITRE Video Quality Mapping Challenge   📄 Report
- Project aims to map low-quality videos to high-quality domains with an double stream deep convolutional network. **2nd place** in the CVPR2020 Workshop NTIRE2020 Challenge, video quality mapping track.

Chinese Character Detection and Recognition in Real Scene   🔗 Project
- Aimed to solve the address recognition problem with an LSTM to track connectivity between character and enabled inclined text detecting. Open-sourced project received more than **340+ stars** on github.

AWARDS AND HONORS

UBC Four Year Doctoral Fellowship (4YF)	*Sep 2021*
Runner-up Award in CVPR2020 NITRE Video Quality Mapping Challenge	*April 2020*
Silver Award, 2018 CCF Collegiate Computer System & Programming Contest Hangzhou	*Oct 2018*
Bronze Award, 2017 ACM-ICPC Qing Dao Onsite Contest	*Dec 2017*
Silver Award, 2017 CCF Collegiate Computer System & Programming Contest Fuzhou	*Oct 2017*
Silver Award, 2017 ACM-ICPC Guang Xi Invitational Contest August	*Aug 2017*
Academic Excellence Award, HUST (10/300)	*July 2017*

TEACHING AND ACADEMIC SERVICES

Teaching Assistant:	UBC EECE 571F 2021W Deep Learning with Structures, CPEN 455 2023W Deep Learning
Journal Reviewer:	TPAMI 2023; TMLR 2024,2025
Conference Reviewer:	CVPR 2021, 2022, 2024; Neurips 2022,2023,2024,2025; ICLR 2023,2024,2025; ICML 2023,2024

SKILLS

Programming languages:	C/C++, CUDA, Python, MATLAB, JAVA
Deep learning frameworks:	Tensorflow, Keras, PyTorch