

Qi Yan

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EDUCATION

- University of British Columbia (UBC)** Jan. 2022 - Present
Ph.D. in Electrical and Computer Engineering, GPA: 93.5%/A+.
Supervisors: [Prof. Renjie Liao](#) and [Prof. Lele Wang](#)
Vancouver, Canada
- Swiss Federal Institute of Technology in Lausanne (EPFL)** Sep. 2019 - Feb. 2022
MSc in Mechanical Engineering, GPA: 5.5/6.0, Thesis: 6.0/6.0.
Lausanne, Switzerland
- Shanghai Jiao Tong University (SJTU)** Sep. 2015 - Jun. 2019
B.E. in Nuclear Engineering with distinction, GPA: 3.7/4.0 (88/100), Ranking: 2/33.
Shanghai, China

PUBLICATIONS & SUBMISSIONS

1. A. Melnik, M. Ljubljanac, C. Lu, **Q. Yan**, W. Ren, H. Ritter, “Video Diffusion Models: A Survey”, *under review*. [[arXiv](#)] [[website](#)]
2. B. Xu*, **Q. Yan***, R. Liao, L. Wang, L. Sigal, “Joint Generative Modeling of Scene Graphs and Images via Diffusion Models”, *under review*. [[arXiv](#)]
3. **Q. Yan**, Z. Liang, Y. Song, R. Liao, L. Wang, “SwinGNN: Rethinking Permutation Invariance in Diffusion Models for Graph Generation”, *Transactions on Machine Learning Research (TMLR)*, June 2024. [[arXiv](#)] [[code](#)]
4. **Q. Yan**, R. Seraj, J. He, L. Meng, T. Sylvain, “AutoCast++: Enhancing World Event Prediction with Zero-shot Ranking-based Context Retrieval”, *ICLR 2024*. [[arXiv](#)] [[code](#)]
5. C. Zhang, **Q. Yan**, L. Meng, T. Sylvain, “What Constitutes Good Contrastive Learning in Time-Series Forecasting?”, *IJCAI 2023 Workshop*. [[arXiv](#)] [[code](#)]
6. **Q. Yan**, J. Zheng, S. Reding, S. Li, I. Doytchinov, “CrossLoc: Scalable Aerial Localization Assisted by Multimodal Synthetic Data”, *CVPR 2022*. [[arXiv](#)] [[code](#)] [[dataset](#)] [[video](#)] [[website](#)]
7. Y. Liu, **Q. Yan**, A. Alahi. “Social NCE: Contrastive Learning of Socially-aware Motion Representations”, *ICCV 2021*. [[arXiv](#)] [[code](#)] [[video](#)] [[website](#)]
8. **Q. Yan**, L. Jiang and S. S. Kia. “Measurement Scheduling for Cooperative Localization in Resource-Constrained Conditions”, *IEEE Robotics and Automation Letters*, vol. 5, no. 2, April 2020 (also selected for *ICRA 2020* conference presentation). [[arXiv](#)] [[code](#)] [[video](#)]
9. **Q. Yan**, R. Li, and X. Meng. “Tribo-Dynamic Simulation and Motion Control of a Rotating Manipulator Based on the Load and Temperature Dependent Friction”, *Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology*, September 2020. [[pdf](#)] [[code](#)]

INTERNSHIPS

- Borealis AI** May 2023 - Sep. 2023
Research Intern, Mentors: [Lili Meng](#), [Tristan Sylvain](#), [Eric Jiawei He](#)
Vancouver, Canada
Improved predictions of future world events using linguistic context from news articles. [[Paper](#)] [[code](#)]
- Schindler EPFL Lab** Feb. 2021 - Jul. 2021
Applied Research Intern, Mentors: [Qixuan Zhang](#), [Nicola Ischia](#)
Lausanne, Switzerland
Developed prototypes for passenger gaze tracking and image processing for elevator shaft machinery monitoring.

RESEARCH EXPERIENCES

- University of British Columbia (UBC)** Jan. 2022 - Present
Research Assistant, Advisors: Prof. Renjie Liao, Prof. Lele Wang Vancouver, Canada
- Built a novel graph diffusion model for joint scene graph and image generation, achieving state-of-the-art layout generation quality and enhancing downstream tasks via paired graph-image generation. [arXiv]
 - Studied learning hardness of permutation invariant objective in graph diffusion models and proposed a novel non-invariant graph transformer scaling up to large graphs with state-of-the-art performance. [Paper] [code]
- Swiss Federal Institute of Technology in Lausanne (EPFL)** Feb. 2020 - Feb. 2022
Research Assistant, Advisors: Dr. Jordan Doytchinov, Prof. Alexandre Alahi Lausanne, Switzerland
- Developed a full-stack pipeline using synthetic data to enhance visual localization. Our method can generate multi-modal data from standard geo-data and create extensive sim-to-real datasets. We applied cross-modal representation learning to improve visual re-localization and achieved state-of-the-art accuracy. [Paper] [Code]
 - Boosted DRL-based robot navigation robustness and reduced collisions using contrastive learning for motion representation. We used prior knowledge of unfavorable events to create negative samples. [Paper] [Code]
- University of California, Irvine (UCI)** Jul. 2018 - Sep. 2019
Research Assistant, Advisor: Prof. Solmaz S. Kia Remote
- Developed a new multi-robot cooperative localization algorithm with reduced communication and computation costs. Tackled the NP-hard peer robot selection with a sub-optimal method minimizing state estimation uncertainty, achieving real-time efficiency and comparable performance to costly algorithms. [Paper] [Code]
- Shanghai Jiao Tong University (SJTU)** Dec. 2017 - Dec. 2018
Research Assistant, Advisor: Prof. Xianghui Meng Shanghai, China
- Conducted complete dynamics modeling for the friction torque at a manipulator joint, and designed a new adaptive sliding mode controller with provable convergence. [Paper] [Code]

HONORS AND AWARDS

ICLR 2024 Travel Award	2024
UBC Graduate Support Initiative Award (CAD \$7,000)	2023
UBC Four Year Doctoral Fellowship (4YF, CAD \$18,200 per year plus tuition)	2022
Outstanding Graduate of Shanghai Jiao Tong University (top 20%)	2019
Excellent Design Award for Undergraduate Thesis (12/133)	2019

MISCELLANEOUS

Academic Services	Reviewer for IEEE Sensors Letters (2020), IEEE RA-L (2021, 2024), IEEE GLOBE-COM (2023), NeurIPS (2023), ICLR (2024), ICML (2024).
Teaching Assistant	UBC CPEN455: Deep Learning [page] 2023/24 Winter Term 2 UBC CPEN400D: Deep Learning [page] 2022/23 Winter Term 2 UBC EECE571F: Deep Learning with Structures [page] 2022/23 Winter Term 1
Presentations	E2E Motion Prediction Transformer, Conference on Robots & Vision May 2024 Score-based Generative Models for Graph, SFU-UBC AI Research Day Dec. 2022