HAN LIN

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INTERESTS

Generative models, multimodal learning, LLMs, robotics learning
Theory-grounded algorithms for efficient machine learning

EDUCATION

University of North Carolina at Chapel Hill　　2023 - Exp. 2028
Ph.D. in Computer Science

- MURGe-Lab. Advised by Prof. Mohit Bansal

Relevant Courses: Video Recognition, Reliable Machine Learning

Columbia University　　2021 - 2023
M.S. in Computer Science (Machine Learning Track)

- DVMM Lab. Advised by Prof. Shih-Fu Chang
- ROAM Lab. Advised by Prof. Matei Ciocarlie and Prof. Shuran Song

Relevant Courses: Learning Theory, Algorithms, Machine Learning, Unsupervised Learning, Bandits & Reinforcement Learning, Causal Inference, Computer Vision, Robotics Learning

Columbia University　　2018 - 2020
M.S. in Financial Engineering
Relevant Courses: Optimization, Combinatorial Optimization, Stochastic Models, Stochastic Calculus, Monte Carlo Methods, Statistical Inference, Bayesian Statistics, Graphical Models

Central University of Finance and Economics　　2014 - 2018
B.S. in Financial Engineering
Relevant Courses: Linear Algebra, Mathematical Analysis, Probability, Statistics, Real Analysis, Numerical Methods, Stochastic Process, Differential Equations

PREPRINTS

1. **VideoDirectorGPT: Consistent Multi-scene Video Generation via LLM-Guided Planning**　　[arxiv|project page]
Han Lin, Abhay Zala, Jaemin Cho, Mohit Bansal, 2023

2. **DiagrammerGPT: Generating Open-Domain, Open-Platform Diagrams via LLM Planning**　　[arxiv|project page]
Abhay Zala, **Han Lin**, Jaemin Cho, Mohit Bansal, 2023

3. **Graph Kernel Attention Transformers**　　[paper|github]
Krzysztof Choromanski*, **Han Lin***, Haoxian Chen*, Jack Parker-Holder, 2021

PUBLICATIONS

1. **Efficient Graph Field Integrators Meet Point Clouds**　　[arxiv|github]
Krzysztof Choromanski*, Arijit Sehanobish*, **Han Lin***, Yunfan Zhao*, Eli Berger, Alvin Pan, Tetiana Parshakova, Tianyi Zhang, David Watkins, Valerii Likhosherstov, Somnath Basu Roy Chowdhury, Avinava Dubey, Deepali Jain, Tamas Sarlos, Snigdha Chaturvedi, Adrian Weller
In International Conference on Machine Learning (**ICML**), 2023

2. **Supervised Masked Knowledge Distillation for Few-Shot Transformers**
[arxiv|github]
Han Lin*, Guangxing Han*, Jiawei Ma, Shiyuan Huang, Xudong Lin, Shih-Fu Chang
In Conference on Computer Vision and Pattern Recognition (**CVPR**), 2023

3. **Active Tactile Exploration for 3D Object Recognition**　　[arxiv|project page]

Jingxi Xu*, **Han Lin***, Shuran Song, Matei Ciocarlie
In IEEE International Conference on Robotics and Automation (**ICRA**), 2023

4. **From block-Toeplitz matrices to differential equations on graphs: towards a general theory for scalable masked Transformers** [arxiv|github]
Krzysztof Choromanski*, **Han Lin***, Haoxian Chen*, Tianyi Zhang, Arijit Sehanobish, Valerii Likhosherstov, Jack Parker-Holder, Tamas Sarlos, Adrian Weller, Thomas Weingarten
In International Conference on Machine Learning (**ICML**), 2022

5. **Hybrid Random Features** [arxiv|github]
Krzysztof Choromanski*, **Han Lin***, Haoxian Chen*, Yuanzhe Ma*, Arijit Sehanobish*, Deepali Jain, Michael Ryoo, Jake Varley, Andy Zeng, Valerii Likhosherstov, Dmitry Kalashnikov, Vikas Sindhwani, Adrian Weller
In International Conference on Learning Representations (**ICLR**), 2022

6. **Demystifying Orthogonal Monte Carlo and Beyond** [arxiv|github]
Han Lin*, Haoxian Chen*, Tianyi Zhang, Clement Laroche, Krzysztof Choromanski
In Advances in Neural Information Processing Systems (**NeurIPS**), 2020

* Co-First Authors, Equal Contribution

RESEARCH EXPERIENCE	**UNC MURGe-Lab**	2023 - now
	Research Assistant, Advised by Prof. Mohit Bansal	
	• Text-to-video generation, multimodal learning, and LLMs	
	DVMM Lab	2022 - 2023
	Research Assistant, Advised by Prof. Shih-Fu Chang and Guangxing Han	
	• Supervised masked knowledge distillation for few-shot Transformers	
	ROAM Lab	2022 - 2023
	Research Assistant, Advised by Prof. Matei Ciocarlie and Prof. Shuran Song	
	• *Active tactile exploration for 3D object recognition*	
	Columbia University	*2019 - 2023*
	Research Collaboration with Prof. Krzysztof Choromanski	
	• *Efficient Transformers, GNNs, random features for kernel estimation*	
	Cornell, Maryland, Max Planck Pre-doctoral Research School	*2022*
INDUSTRY EXPERIENCE	***China Merchant Securities***	*2020 - 2021*
	Option Market Making Quant Trader, Full Time	
	• *Commodity options and futures trading and daily P&L attribution*	
TEACHING EXPERIENCE	*COMS 4231 Analysis of Algorithms*	*Fall 2022*
	COMS 4732 Computer Vision II: Learning	*Spring 2022*
	COMS 4721 Machine Learning for Data Science	*Spring 2022*
	QMSS 5073 Machine Learning for Social Science	*Fall 2021*
	IEOR 4007 Optimization Models & Methods for FE	*Fall 2019*
	IEOR 4418 Transportation Analytics & Logistics	*Spring 2019*
SKILLS	*Python, C/C++, MATLAB, R, MySQL, LaTeX*	
	PyTorch, TensorFlow, Keras, Scikit-learn	
SERVICES	***Reviewer:*** *ICLR 2024, ICML 2022/2023, NeurIPS 2022/2023*	
	Conference Volunteer: *Robotics: Science and Systems (RSS) 2022*	