CHENYU (MONICA) WANG

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EDUCATION BACKGROUND

Massachusetts Institute of Technology — **Cambridge, MA**
Ph.D. Student in Electrical Engineering and Computer Science (EECS) | GPA 5.0/5.0 — Aug. 2022-present
M.S. in Electrical Engineering and Computer Science (EECS) — Aug. 2022-Feb. 2025
Advised by Prof. Tommi Jaakkola

Tsinghua University — **Beijing, China**
Bachelor of Economics, Minor in Data Science and Technology | GPA 3.99/4.0 (Ranking 1/192) — Sep. 2018-Jun. 2022
Advised by Prof. Mingsheng Long, Prof. Mengdi Wang, and Prof. Cyrus Shahabi

University of California, Berkeley — **Berkeley, CA**
Exchange Student, Department of Statistics (Instructed by Prof. Noureddine El Karoui) | GPA 4.0/4.0 — Jan. 2021-Jun. 2021

RESEARCH INTERESTS

My research interests lie broadly in machine learning, generative models, representation learning, and AI for science. Recently my research focuses on multi-modal learning, diffusion generative models, alignment, and world models, with applications to various domains.

PUBLICATIONS & PREPRINTS

(: Equal Contribution)* Google Scholar

- Yuhui Zhang*, Yuchang Su*, **Chenyu Wang**, Tianhong Li, Zoe Wefers, Jeffrey Nirschl, James Burgess, Daisy Ding, Alejandro Lozano, Emma Lundberg, Serena Yeung-Levy. CellFlow: Simulating Cellular Morphology Changes via Flow Matching. In *arXiv preprint 2025*. [link]
- Masatoshi Uehara, Yulai Zhao, **Chenyu Wang**, Xiner Li, Aviv Regev, Sergey Levine, Tommaso Biancalani. Inference-Time Alignment in Diffusion Models with Reward-Guided Generation: Tutorial and Review. In *arXiv preprint 2025*. [link]
- Yuhui Zhang*, Yuchang Su*, Yiming Liu, Xiaohan Wang, James Burgess, Elaine Sui, **Chenyu Wang**, Josiah Aklilu, Alejandro Lozano, Anjiang Wei, Ludwig Schmidt, Serena Yeung-Levy. Automated Generation of Challenging Multiple-Choice Questions for Vision Language Model Evaluation. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition,* ***CVPR 2025***. [link]
- **Chenyu Wang***, Masatoshi Uehara*, Yichun He, Amy Wang, Tommaso Biancalani, Avantika Lal, Tommi Jaakkola, Sergey Levine, Hanchen Wang, Aviv Regev. Fine-Tuning Discrete Diffusion Models via Reward Optimization with Applications to DNA and Protein Design. In *International Conference on Learning Representations,* ***ICLR 2025***. [link]
- **Chenyu Wang***, Sharut Gupta*, Xinyi Zhang, Sana Tonekaboni, Stefanie Jegelka, Tommi Jaakkola, Caroline Uhler. An Information Criterion for Controlled Disentanglement of Multimodal Data. In *International Conference on Learning Representations,* ***ICLR 2025***. (Also **Oral** and **Honorable Mention Award** at NeurIPS 2024 UniReps workshop.) [link]
- Xiner Li, Yulai Zhao, **Chenyu Wang**, Gabriele Scalia, Gokcen Eraslan, Surag Nair, Tommaso Biancalani, Aviv Regev, Sergey Levine, Masatoshi Uehara. Derivative-Free Guidance in Continuous and Discrete Diffusion Models with Soft Value-Based Decoding. In *NeurIPS 2024 Workshop on AI for New Drug Modalities*. [link]
- Sharut Gupta*, **Chenyu Wang***, Yifei Wang*, Tommi Jaakkola, Stefanie Jegelka. In-Context Symmetries: Self-Supervised Learning through Contextual World Models. In *Advances in Neural Information Processing Systems,* ***NeurIPS 2024***. (Also **Oral** at NeurIPS 2024 SSL workshop.) [link] [MIT CSAIL News]
- Hannes Stark*, Bowen Jing*, **Chenyu Wang**, Gabriele Corso, Bonnie Berger, Regina Barzilay, Tommi Jaakkola. Dirichlet Flow Matching with Applications to DNA Sequence Design. In *International Conference on Machine Learning,* ***ICML 2024***. (Also **Oral** at ICLR 2024 MLGenX workshop.) [link]
- **Chenyu Wang**, Sharut Gupta, Caroline Uhler, Tommi S. Jaakkola. Removing Biases from Molecular Representations via Information Maximization. In *International Conference on Learning Representations,* ***ICLR 2024***. [link]

- **Chenyu Wang***, Joseph Kim*, Le Cong, Mengdi Wang. Neural Bandits for Protein Sequence Optimization. In *56th Annual Conference on Information Sciences and Systems, **CISS 2022***. [link]
- **Chenyu Wang***, Zongyu Lin*, Xiaochen Yang, Jiao Sun, Mingxuan Yue, Cyrus Shahabi. HAGEN: Homophily-Aware Graph Convolutional Recurrent Network for Crime Forecasting. In *AAAI Conference on Artificial Intelligence, **AAAI 2022***. **(Oral Presentation.)** [link]
- Yang Shu*, Zhangjie Cao*, **Chenyu Wang**, Jianmin Wang, Mingsheng Long. Open Domain Generalization with Domain-augmented Meta-learning. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition, **CVPR 2021***. [link]

RESEARCH EXPERIENCE

Representation Learning and Generative Models with Applications to Biology — **Cambridge, MA**
Advised by Prof. Tommi Jaakkola, MIT EECS — Aug. 2022-present

Tree-Based Neural Bandits for High-Value Protein Design — **Princeton, NJ**
Advised by Prof. Mengdi Wang, Department of Electrical Engineering, Princeton University — Jun. 2021-Dec. 2021

Homophily-Aware Graph Convolutional Recurrent Network for Crime Forecasting — **Los Angeles, CA**
Advised by Prof. Cyrus Shahabi, Department of Computer Science, USC — Jan. 2021-Jun. 2021

Open Domain Generalization with Domain-Augmented Meta-Learning — **Beijing, China**
Advised by Prof. Mingsheng Long, School of Software, Tsinghua University — Sept. 2020-Nov. 2020

Understanding Chinese Bond Yield Curve: Excess Return Prediction — **Beijing, China**
Advised by Prof. Hao Wang, SEM, Tsinghua — Jun. 2020-Aug. 2020

HONORS & AWARDS

- **D. E. Shaw Research Doctoral Fellowship**, 2025
- **Honorable Mention Award in NeurIPS 2024 UniReps Workshop**, 2024
- **MIT EECS Great Educators Fellowship**, 2022
- **Outstanding Undergraduate in Tsinghua** (2% in Tsinghua), 2022
- Outstanding Undergraduate in Beijing, 2022
- **Chen Daisun Schorlarship** (3 in Tsinghua SEM), 2022
- Undergraduate Commencement Student Speaker of Tsinghua SEM, 2022
- Meritorious Winner in MCM/ICM Mathematical Contest in Modelling, 2021
- Chen Xiaoyue Scholarship, 2021
- Tang Lixin Scholarship (50 in Tsinghua), 2020
- **National Scholarship** (0.2% in China), 2019
- Athletics Excellence Scholarship of Tsinghua, 2019
- First Class Scholarship for Freshmen of Tsinghua, 2018
- **Gold medalist of 50th International Chemistry Olympiad** (4 in China, 6th place in the world), 2018
- Silver medalist of 15th China Girl's Mathematical Olympiad (50 in China), 2016

WORK EXPERIENCE

Genentech — **South San Francisco**
Research Intern in Dr. Aviv Regev's Lab — May 2024-Aug. 2024

Jane Street Asia Limited — **Hong Kong**
Quantitative Trading Intern (Return offer extended) — Jun. 2021-Sept. 2021

WizardQuant Capital Management — **Zhuhai, China**
Quantitative Research Intern, Quantitative Research Department — Jun. 2020-Aug. 2020

Techsharpe Quant Capital Management — **Beijing, China**
Data Analyst Intern, Trading Department — Jan. 2020-Feb. 2020

SERVICES

- Reviewer: ICML 2025, ICLR 2025, NeurIPS 2024, PLOS Computational Biology, ICML 2024/2025 workshops, ICLR 2024/2025 workshops, NeurIPS 2024 workshops
- Teaching Assistant: MIT 6.8300 Advances in Computer Vision
- Volunteer: WiDS Cambridge Datathon student volunteer

INVITED TALKS

- MIT Machine Learning in Biology Working Group (MLBWG) 2025
- NeurIPS 2024 UniReps Workshop 2024
- Broad Institute of MIT and Harvard Models, Inference & Algorithms (MIA) Post Doc Lightning Talks 2024
- MIT ML Tea Talk 2024
- MIT LIDS Student Conference 2024
- Valence Labs Molecular Modeling & Drug Discovery (M2D2) Reading Group 2024
- Temporal Graph Reading Group 2023

LEADERSHIP & ACTIVITIES

- Team Leader, Meritorious Winner in 2021 MCM/ICM Mathematical Contest in Modelling. Feb. 2021
- Co-president, Banking & Investment Mentor Program (A 10-year global non-profit organization). Feb. 2021-Feb. 2022
- Director of Department of Sports, Student Union of Tsinghua SEM. Mar. 2019-Sept. 2020

SKILLS & INTERESTS

- **Languages:** English (Proficient; TOEFL: 110/120); Mandarin (Native)
- **Technical Skills:** Python/C++/Matlab; Deep learning framework: PyTorch, Tensorflow; Basic knowledge of SQL and Linux.
- **Interests:** Sports (1st place in 4*400m; member of SEM basketball and soccer team), Chinese Zither (Amateur Certificate 9)