CHENYU (MONICA) WANG

https://chenyuwang-monica.github.io | wangchy@mit.edu | (+1)617-902-8630
MIT Stata Center, 32 Vassar St. G418, Cambridge MA 02139

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 focuses on developing controllable and efficient generative models, via reinforcement learning, multi-modal learning, and representation learning. I work across various application domains, including language models, vision, and scientific data (e.g. biochemistry). My recent work explores:

- Reinforcement learning and inference-time alignment for deep generative models and language models.
- Multi-modal learning, especially multi-modal representations and their interactions with generative models.
- Enhancing biochemistry discovery through generative models and agents.

PUBLICATIONS & PREPRINTS

(: Equal Contribution)* — Google Scholar

- **Chenyu Wang***, Cai Zhou*, Sharut Gupta, Zongyu Lin, Stefanie Jegelka, Stephen Bates, Tommi Jaakkola. Learning Diffusion Models with Flexible Representation Guidance. In *arXiv preprint 2025*. (Also **Oral** at ICML 2025 FM4LS workshop.) [link]
- Hanchen Wang*, Yichun He*, Paula P Coelho*, Matthew Bucci*, ..., **Chenyu Wang**, ..., Aviv Regev. SpatialAgent: An autonomous AI agent for spatial biology. In *bioRxiv preprint 2025*. [link]
- Hanqun Cao*, Haosen Shi*, **Chenyu Wang**, Sinno Jialin Pan, Pheng-Ann Heng. GLID^{2}E: A Gradient-Free Lightweight Fine-tune Approach for Discrete Sequence Design. In *ICLR 2025 GenBio Workshop*. [link]
- Yuhui Zhang*, Yuchang Su*, **Chenyu Wang**, Tianhong Li, Zoe Wefers, Jeffrey Nirschl, James Burgess, Daisy Ding, Alejandro Lozano, Emma Lundberg, Serena Yeung-Levy. CellFlux: Simulating Cellular Morphology Changes via Flow Matching. In *International Conference on Machine Learning, **ICML 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 *arXiv preprint 2024*. [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

Research Intern at Meta FAIR — **Menlo Park, CA**
Advised by Yuandong Tian and Bo Liu — May 2025-Aug. 2025

Research Intern at Genentech — **South San Francisco, CA**
Advised by Aviv Regev, Hanchen Wang, and Masatoshi Uehara — May 2024-Aug. 2024

Research Intern at Princeton University — **Princeton, NJ**
Advised by Prof. Mengdi Wang, Department of Electrical Engineering, Princeton University — Jun. 2021-Dec. 2021

Research Intern at USC — **Los Angeles, CA**
Advised by Prof. Cyrus Shahabi, Department of Computer Science, USC — Jan. 2021-Jun. 2021

Research Assistant at Tsinghua University — **Beijing, China**
Advised by Prof. Mingsheng Long, School of Software, Tsinghua University — Sept. 2020-Nov. 2020

HONORS & AWARDS

- **Citadel GQS PhD Fellowship** (the only recipient in EECS), 2025
- **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

Meta — **Menlo Park**
Research Intern in Meta FAIR — May 2025-Aug. 2025

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 2025/2026, NeurIPS 2024/2025, PLOS Computational Biology
- Teaching Assistant: MIT 6.8300 Advances in Computer Vision
- Volunteer: WiDS Cambridge Datathon student volunteer

INVITED TALKS

- MIT CSB Seminar — 2025
- 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)