

# CHENYU (MONICA) WANG

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## EDUCATION BACKGROUND

### Massachusetts Institute of Technology

*Ph.D. Student in Electrical Engineering and Computer Science (EECS)* | GPA 5.0/5.0

*M.S. in Electrical Engineering and Computer Science (EECS)*

Advised by Prof. Tommi Jaakkola

Cambridge, MA

Aug. 2022-present

Aug. 2022-Feb. 2025

### Tsinghua University

*Bachelor of Economics, Minor in Data Science and Technology* | GPA 3.99/4.0 (Ranking 1/192)

Advised by Prof. Mingsheng Long, Prof. Mengdi Wang, and Prof. Cyrus Shahabi

Beijing, China

Sep. 2018-Jun. 2022

### University of California, Berkeley

*Exchange Student, Department of Statistics (Instructed by Prof. Noureddine El Karoui)* | GPA 4.0/4.0

Berkeley, CA

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<sup>2</sup>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

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### Research Intern at Meta FAIR

*Advised by Yuandong Tian and Bo Liu*

**Menlo Park, CA**

May 2025-Aug. 2025

### Research Intern at Genentech

*Advised by Aviv Regev, Hanchen Wang, and Masatoshi Uehara*

**South San Francisco, CA**

May 2024-Aug. 2024

### Research Intern at Princeton University

*Advised by Prof. Mengdi Wang, Department of Electrical Engineering, Princeton University*

**Princeton, NJ**

Jun. 2021-Dec. 2021

### Research Intern at USC

*Advised by Prof. Cyrus Shahabi, Department of Computer Science, USC*

**Los Angeles, CA**

Jan. 2021-Jun. 2021

### Research Assistant at Tsinghua University

*Advised by Prof. Mingsheng Long, School of Software, Tsinghua University*

**Beijing, China**

Sept. 2020-Nov. 2020

## HONORS & AWARDS

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- **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 Scholarship** (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, 6<sup>th</sup> place in the world), 2018

- Silver medalist of 15th China Girl's Mathematical Olympiad (50 in China), 2016

## WORK EXPERIENCE

<b>Meta</b>	<b>Menlo Park</b>
<i>Research Intern in Meta FAIR</i>	May 2025-Aug. 2025
<b>Genentech</b>	<b>South San Francisco</b>
<i>Research Intern in Dr. Aviv Regev's Lab</i>	May 2024-Aug. 2024
<b>Jane Street Asia Limited</b>	<b>Hong Kong</b>
<i>Quantitative Trading Intern (Return offer extended)</i>	Jun. 2021-Sept. 2021
<b>WizardQuant Capital Management</b>	<b>Zhuhai, China</b>
<i>Quantitative Research Intern, Quantitative Research Department</i>	Jun. 2020-Aug. 2020
<b>Techsharpe Quant Capital Management</b>	<b>Beijing, China</b>
<i>Data Analyst Intern, Trading Department</i>	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 (1<sup>st</sup> place in 4\*400m; member of SEM basketball and soccer team), Chinese Zither (Amateur Certificate 9)