# 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

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

- 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 *arXiv preprint 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]

- 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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|---|---:|
| **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

- **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

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| **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/ICLR 2024/NeurIPS 2024 workshops

## LEADERSHIP & ACTIVITIES

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| - 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$^{st}$ place in 4*400m; member of SEM basketball and soccer team), Chinese Zither (Amateur Certificate 9)