

# 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

Advised by Prof. Tommi Jaakkola

Cambridge, MA

Aug. 2022-present

### 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 interests lie broadly in machine learning, representation learning, generative models, and AI for science. Recently my research focuses on multi-modal representation learning, diffusion generative models, and controlled generation, with applications to biology and drug discovery.

## PUBLICATIONS & PREPRINTS

(\*: Equal Contribution)

[Google Scholar](#)

- **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 *NeurIPS 2024 Workshop on Machine Learning in Structural Biology*. [\[link\]](#)
- **Chenyu Wang\***, Sharut Gupta\*, Xinyi Zhang, Sana Tonekaboni, Stefanie Jegelka, Tommi Jaakkola, Caroline Uhler. An Information Criterion for Controlled Disentanglement of Multimodal Data. In *NeurIPS 2024 Workshop on Unifying Representations in Neural Models*. [\[link\]](#)
- 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*. [\[link\]](#)
- 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*. [\[link\]](#)
- **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*

### **Tree-Based Neural Bandits for High-Value Protein Design**

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

### **Homophily-Aware Graph Convolutional Recurrent Network for Crime Forecasting**

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

### **Open Domain Generalization with Domain-Augmented Meta-Learning**

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

### **Understanding Chinese Bond Yield Curve: Excess Return Prediction**

*Advised by Prof. Hao Wang, SEM, Tsinghua*

Aug. 2022-present

**Princeton, NJ**

Jun. 2021-Dec. 2021

**Los Angeles, CA**

Jan. 2021-Jun. 2021

**Beijing, China**

Sept. 2020-Nov. 2020

**Beijing, China**

Jun. 2020-Aug. 2020

## **HONORS & AWARDS**

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- **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), 2022

## **WORK EXPERIENCE**

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### **Genentech**

*Research Intern in Dr. Aviv Regev's Lab*

**South San Francisco**

May 2024-Aug. 2024

### **Jane Street Asia Limited**

*Quantitative Trading Intern (Return offer extended)*

**Hong Kong**

Jun. 2021-Sept. 2021

### **WizardQuant Capital Management**

*Quantitative Research Intern, Quantitative Research Department*

**Zhuhai, China**

Jun. 2020-Aug. 2020

### **Techsharpe Quant Capital Management**

*Data Analyst Intern, Trading Department*

**Beijing, China**

Jan. 2020-Feb. 2020

## **SERVICES**

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- Reviewer: ICLR 2025, NeurIPS 2024, PLOS Computational Biology

## **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**

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- **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)