

Muhang Tian

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<https://muhang-tian.com/>

EDUCATION

Courant Institute, New York University
PhD in Computer Science

Jan. 2025 – Expected Dec. 2029

Duke University

BS in Computer Science, double minor in Mathematics and Economics (GPA: 3.9/4.0)
Graduation with Highest Distinction

Aug. 2020 – May 2024

HONORS AND AWARDS

Alex Vasilos Memorial Award: the highest award conferred by Duke Computer Science. 2024

Henry M. MacCracken Award: multi-year funding for New York University PhD students. 2024

CS+ Summer Research Fellowship: Duke summer research funding (\$10,000). 2022 – 2023

PUBLICATIONS

*Equal contribution

- [1] Peng, N.*, Tian, M.*, & Fain, B. (2025). **Multi-objective Reinforcement Learning with Nonlinear Preferences: Provable Approximation for Maximizing Expected Scalarized Return.** (*AAMAS*).
- [2] Tian, M., Chen, B.*, Guo, A.*, Jiang, S., & Zhang, A. R. (2024). **Reliable Generation of Privacy-preserving Synthetic Electronic Health Record Time Series via Diffusion Models.** (*JAMIA*).
- [3] Zhu, C. Q.*, Tian, M.*, Semenova, L., Liu, J., Xu, J., Scarpa, J., & Rudin, C. (2024). **Fast and Interpretable Mortality Risk Scores for Critical Care Patients.** (*JAMIA*).
- [4] Fan, Z.*, Peng, N.*, Tian, M.*, & Fain, B. (2023). **Welfare and Fairness in Multi-objective Reinforcement Learning.** (*AAMAS*).

EXPERIENCES

Undergraduate Research Assistant | *Duke University*

May 2022 – May 2024

Research on diffusion models, reinforcement learning, and interpretable machine learning. All works published in journals and conferences. Also worked on various machine learning projects on applied computer vision and machine learning pipelines.

Machine Learning Engineer | *Big Ideas Lab*

Nov. 2022 – Mar. 2023

Implemented EfficientDet for object detection tasks on COVID-19 saliva test results. Collected data from public sources and applied data augmentation techniques to improve average precision by 35%.

Software Engineer | *Afloat*

May 2022 – Aug. 2022

Maintained company server, performed software testing, and weekly reported directly to co-founders.

Data Engineer | *Big Ideas Lab*

May 2022 – Oct. 2022

Used data from wearable devices such as Garmin and Apple Watch to estimate health outcomes with ML. Implemented ML algorithms to perform healthcare data analysis for the open-source repository.

ACADEMIC SERVICES

Reviewer: NeurIPS (2023), ICLR (2024), AAAI (2025), IEEE ICHI (2023).

Teaching Assistant: Design and Analysis of Algorithms, Microeconomics, Econometrics.

TECHNICAL SKILLS

Languages: Python, Java, JavaScript, C/C++, R, SQL, MATLAB, CSS/HTML.

Softwares: PyTorch, TensorFlow, Keras, scikit-learn, NumPy, Pandas, Linux, Slurm, Docker, Git, Linux.