Runqian (Ray) Wang

Email: raywang4@mit.edu   Website: https://raywang4.github.io

Education

Massachusetts Institute of Technology, Bachelor of Science.   Sep 2022 – May 2026

Double Major in Artificial Intelligence & Mathematics

- Relevant Coursework (G for graduate level):
    - *Artificial Intelligence*: Computer Vision (G), Machine Learning (G), Distributed Algorithms (G), Natural Language Processing, Design and Analysis of Algorithms, Representation Inference and Reasoning in AI
    - *Mathematics*: Probability (G), Linear Algebra, Information Theory, Topology, Differential Equations, Numerical Methods, Discrete Mathematics
- GPA:5.0/5.0

Research Experiences

Harvard University Du Lab   May 2025 - Present

PI: Yilun Du

- Proposes an equilibrium-based generative model that supports optimization-driven sampling, exceeds diffusion/flow in generation quality, and offers flexibility for downstream tasks
- First-author submission under review

MIT He Vision Group   Apr 2024 - Present

PI: Kaiming He

- Introduces Dispersive Loss, a self-contained representation regularizer to improve diffusion
- First-author submission under review

MIT-IBM-Watson AI Lab   Sep 2023 - May 2024

PI: Rogerio Feris

- Develops data-free transferrable parameter efficient fine-tuning (PEFT) methods for LLMs
- First-author paper accepted at NeurIPS 2024 main conference

Microsoft Research Asia   May 2023 - Aug 2023

PI: Zhirong Wu

- Analyze and design state-of-the-art adaptive optimization methods in deep learning
- Work spotlighted by Microsoft and nominated as "Star of Tomorrow" researcher

MIT CSAIL Medical Vision Group   Sep 2022 - May 2023

PI: Polina Golland

- Designs a new deep-learning approach to intravascular ultrasound image analysis
- Paper accepted at Second International AMAI Workshop

Academic Services

Teaching Assistant for 6.7900 Graduate Course in Machine Learning   Sep 2024 - Dec 2024

  ● As the only undergraduate TA admitted, assisted with answering questions, writing exams, grading, and logistics

Reviewer of NeurIPS, ICLR   2024 - Present

Selected Awards & Programs

USA Computing Olympiad National Camp Qualifier   May 2021

  ● Ranked top 14 among all US high school students in algorithmic design and competitive programming

MIT BattleCode Programming Competition 2nd Place   Feb 2023

  ● Entered final tournament as 1st seed out of 456 teams (1321 competitors) worldwide and ranked 2nd in the finals

Terminal Programming Competition 3rd Place   Apr 2023

  ● Won 3rd place among all east coast college contestants

Jane Street First Year Trading and Technology Program   Mar 2023

Discover Citadel Program   Apr 2024

Selected Publications

Wang, Runqian, and Yilun Du. "Equilibrium Matching: Generative Modeling with Implicit Energy-Based Models." *arXiv preprint arXiv:2510.02300* (2025).

Wang, Runqian, and Kaiming He. "Diffuse and Disperse: Image Generation with Representation Regularization." *arXiv preprint arXiv:2506.09027* (2025).

Wang, Runqian, et al. "Trans-LoRA: towards data-free Transferable Parameter Efficient Finetuning." *Advances in Neural Information Processing Systems* 37 (2024): 61217-61237.

Kashyap, Satyananda, et al. "Feature selection for malapposition detection in intravascular ultrasound-a comparative study." *International Workshop on Applications of Medical AI*. Cham: Springer Nature Switzerland, 2023.

Chen, Chong, et al. "An efficient algorithm to compute the X-ray transform." *International Journal of Computer Mathematics* 99.7 (2022): 1325-1343.

Wang, Runqian. "Comparing Grover's quantum search algorithm with classical algorithm on solving satisfiability problem." *2021 IEEE Integrated STEM Education Conference (ISEC)*. IEEE, 2021.