Charles L. Wang

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Education

Columbia University, New York, NY   2022 – 2026
B.A. in Mathematics-Statistics
B.A. in Computer Science

Publications

Utility–Learning Tension in Self Modifying Agents[†]   2025
arXiv Preprint
Charles L. Wang*, Keir Dorchen*, Peter Jin

MathBode: Understanding LLM Reasoning with Dynamical Systems[†]   2025
Workshop on Mathematical Reasoning and AI (NeurIPS 2025)
Charles L. Wang

Zebra-CoT: A Dataset for Interleaved Vision Language Reasoning[†]   2025
arXiv Preprint
Ang Li*, Charles L. Wang*, Deqing Fu*, Kaiyu Yue*, Wang Bill Zhu*, Ollie Liu*,
Peng Guo, Willie Neiswanger, Furong Huang, Tom Goldstein, Micah Goldblum

MI9: An Integrated Runtime Governance Framework for Agentic AI[†]   2025
arXiv Preprint
Charles L. Wang*, Trisha Singhal*, Ameya Kelkar, Jason Tuo

Experience

Columbia University   Dec 2024 – Present
Research Assistant, Advised by Micah Goldblum   New York, NY

- Latent reasoning
- Disentangled representation learning for speech
- Generated dataset and training multimodal generation models for interleaved text and visual CoT

Barclays   Jun 2025 – Aug 2025
AI Governance Intern   New York, NY

- Developed a novel integrated technical framework[†] for safe AI governance.
- Designed a platform- and foundation-model-agnostic runtime framework to prevent high-risk issues during agent execution.

Barclays   Jun 2024 – Aug 2024
Quantitative Analyst   Wilmington, DE

- Built high-dimensional models predicting total bank credit losses and risk under different economic events with 98% accuracy.
- Models serve as the official CCAR challenger suite, replacing a previous 9-figure-cost outsourced process.

Travelers   Jun 2023 – Aug 2023
Software Engineer   Hartford, CT

- Led re-architecting of the authentication system, replacing LDAP with OIDC and OAuth 2.0 to improve security.
- Migration reduced technical debt and enabled modern single sign-on (SSO) across internal applications.

Extra Projects

Lumara AI[†]
Recursive improvement pipeline that refines LLM outputs via iterative self-critique and revision. *lumaraai.xyz*

Noesis[†]
A digital world for people to create and explore their personal AI agents' lives and research workflows. *noesis.live*

Teaching & Service

Teaching Assistant

COMS 3203: Discrete Mathematics, *Columbia University*.

Conference Reviewer

- AISTATS
- NeurIPS

Honors & Awards

- Data Science Institute Research Grant, *Columbia University* 2025
- Google TRC Program 2025
- 2x AIME Qualifier 2021, 2022
- National Merit Finalist 2022

Skills

Operating Systems: Linux, macOS, Windows

Programming Languages & Frameworks: Python, LaTeX, Java, C, Rust, MATLAB, PyTorch, TensorFlow, NumPy, Git, JavaScript, Full-Stack Development, CUDA

Languages: English (native), Chinese (proficient), French (conversational)

Relevant Coursework

Analysis & Optimization, Analysis of Algorithms, Fourier Analysis, Computer Science Theory, Advanced Programming, Linear Algebra, Statistical Inference, Discrete Math, Artificial Intelligence, Machine Learning, Natural Language Processing

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* Equal contribution first-author

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