Charles L. Wang *[US Citizen]*

Columbia University (NYC), Class of 2026 | Computer Science, Mathematics-Statistics

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EXPERIENCE

Lumara   Jan 2025 - Present
Founder/Lead Engineer
- Building Lumara (lumaraai.xyz), an AI-powered platform democratizing access to verified mentorship across all domains of learning.

Columbia Engineering   Dec 2024 - Present
Machine Learning Undergraduate Researcher
- Working with Prof. Micah Goldblum to develop a **novel latent reasoning benchmark**, conducting extensive literature review on Chain of Continuous Thought (CoConuT) reasoning in abstract latent spaces using **recurrent depth**.
- Developing **test-time scaling** techniques to enhance **LLM reasoning** without retraining by dynamically adjusting inference depth to improve math and logical reasoning accuracy on fine-tuned data samples.

Barclays   Jun 2024 - Aug 2024
Quantitative Analyst Intern
- Developed and rigorously tested hypotheses about credit risk drivers using **4M+ data points**, independently researching and implementing **time series** models.
- Collaborated cross-functionally with risk managers and quantitative analysts to refine models and successfully **deployed to production** after conducting **statistical validation** against 20 years of historical data.

The Travelers Companies   Jun 2023 - Aug 2023
Software Engineer Intern
- Designed **Java** OKTA security protocol for LDAP authentication, enabling secure user login and access management.
- **Deployed** enhancements via **CI/CD** pipelines using Jenkins, Docker, & Terraform for production rollouts.

RESEARCH PROJECTS [charleslwang.github.io]

A Step by Step Analysis of History Through Stairways [Team Lead for MCM 2025]
- Pioneered a novel multidisciplinary framework synthesizing **stochastic wear** equations, coupled **differential systems**, and biomechanical force tensors to **reconstruct historical movement patterns** in archaeological sites.
- Developed a **probabilistic inference** pipeline combining Gaussian mixture spatial modeling and Monte Carlo uncertainty quantification, achieving statistically significant reconstruction of directional traffic flows and temporal usage patterns from LiDAR-derived geometrical features.

GA-Based Share Repurchase Strategy Using GBM Simulation [Quant Researcher @ ask2.ai]
- Implemented a regime-switching jump diffusion model with genetic algorithms to **optimize trading execution**, using simulated GBM price data and rigorous statistical validation via VWAP differential to maximize shareholder returns.
- Conducted comprehensive analysis identifying optimal drift parameters and key trading dynamics, while critically evaluating methodology limitations including **look-ahead bias** in the final research paper.

EDUCATION

Columbia University, NY [2022-2026]
Major: Double BA in Computer Science & Mathematics-Statistics
Relevant Coursework: AI, ML, NLP, Linear Regression Models, Statistical Inference, Discrete Math **(TA),** Linear Algebra, Probability Theory, Analysis of Algorithms, Data Structures, Stochastic Processes, Analysis & Optimization
Programs: SIG Trading Discovery Day, D.E. Shaw Connect, Goldman Sachs Virtual Insight Series
Awards: 2x AIME Qualifier, National Merit Finalist

SKILLS

Programming Languages: Python, Java, SQL, C, Bash
Data Science/ML Frameworks: Numpy, pandas, sklearn, Tensorflow, Keras, Hugging Face
Big Data/Distributed Systems: Spark, Docker, MongoDB, SQL
DevOps/Cloud: AWS, Azure, Docker, Git