Mingxuan He

Data Scientist / Quant Researcher

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Profile

Quantitative researcher and data scientist specializing in decentralized finance (DeFi) and blockchain economics. Experienced in mechanism design, computational simulation, and on-chain data analytics. Skilled at translating complex mathematical models and large-scale data into actionable insights.

Core skills: quantitative research, machine learning, computational simulation, onchain analytics, technical writing

Education

University of Chicago *Chicago, IL*

M.A. in Computational Economics *Aug 2022 – May 2024*

- Committee members: Dr. Gina Pieters, Dr. Anthony Lee Zhang

Grinnell College *Grinnell, IA*

B.A. in Mathematics and B.A. in Economics with Honors *Aug 2018 – May 2022*

- Advisors: Dr. Jennifer Paulhus, Dr. Keith Brouhle

Experiences

Gauntlet Networks, Inc. *New York, NY*

Data Scientist / Quant Researcher *Jun 2024 – Present*

- Vault Strategies: Quant research and risk management for Gauntlet-curated DeFi vault strategies, including BTC yield strategies such as Bitget's bgBTC
- AI Agents: Built Aria, Gauntlet's in-house AI agent for vault risk monitoring and operations (450+ production alerts triaged, $1.5B+ supplied assets under risk management)
- Restaking (2024–2025): Led quant research and operations for Gauntlet's flagship BTC strategy (gtBTC) and restaking vaults ($300M+ TVL total); worked with EigenLayer, Symbiotic, and Babylon on research and mechanism design

Nethermind

Summer Research Fellow *Jun 2023 – Sep 2023*

Worked with Nethermind's research team on research and data science projects related to DeFi and cryptoeconomics

- LST Modeling: Developed an agent-based simulation framework for liquid staking
- Lido CSM: Designed bonding mechanisms for Lido's permissionless staking module
- Institutional Research: Produced analytical reports on emerging DeFi topics for a top-tier institutional client

Polygon

Research Analyst (DeFi) *Oct 2022 – Jun 2023*

- Conducted deep-dive analyses for over 20 decentralized perpetual futures (perp) exchanges; studied protocols' technical and economic aspects including risk profiles and detailed collateral, liquidity, and funding mechanisms and synthesized them into internal documentation.

Research Papers

Working Papers

He, M. (2023). Deep Learning for Dynamic NFT Valuation. arxiv preprint https://arxiv.org/abs/2312.05346

Published Papers

He, M., Gao, M., Gao, Y., & Eliott, F. M. (2022). Cascading Failures and the Robustness of Cooperation in a Unified Scale-Free Network Model. In *Complex Networks & Their Applications X*, 2022. Springer, Cham. https://doi.org/10.1007/978-3-030-93413-2_31

Short Papers and Research Reports

He, M. & Chitra, T. (2026). Inside Aria: Engineering an Agent for Institutional DeFi. Gauntlet Research Blog.

He, M. & Chitra, T. (2026). Building Risk-Aware AI Agents for Vault Curation. Gauntlet Research Blog.

Additional short papers, research reports, and blogs available at mingxuanhe.xyz/research

Presentations

Yield At Scale: Building Earn Features for 100M+ Users (panel, with Bitget and Morph) Oct 2026, Vault Summit, Singapore.

Pricing Slashing Risks Feb 2025, ETHDenver - Restaking Circle, Denver, US.

Post-Shanghai Liquid Staking Derivatives and Bank Run Risks Sep 2023, Science of Blockchain Conference (SBC) - Decentralized Financial Stability Forum, Stanford University, Palo Alto, US.

Liquidity unleashed: A research driven analysis of post-Shanghai liquid staking derivatives Sep 2023, ETHChicago - Main Stage, Chicago, US.

Workshop on Agent-Based Simulations for Protocol Design, Tokenomics, and Risk Analysis Sep 2023, ETHChicago, Chicago, US.

Cascading Failures and the Robustness of Cooperation in a Unified Scale-Free Network Model Dec 2021, International Conference on Complex Networks and their Applications (ICCNA21), Polytechnic University of Madrid, Madrid, Spain

Professional Services

Uniswap Foundation

Founding member, MEV+UX Working Group — *Oct 2023 – Present*

- Invited as a founding member of new research group working on solutions to UX issues related to DeFi MEV
- Collaborated with researchers from multiple disciplines to foster theoretical and data-driven approaches to MEV challenges

ETHChicago — *Chicago, IL, U.S.*

Community Co-organizer — *Sep 2023*

- Facilitated organization of the inaugural event through professional outreach and network collaborations
- Gave a presentation and hosted an hour-long hackathon workshop aimed at upskilling hackathon participants

Grants and Awards

2023	**Gitcoin Grants 18**, Gitcoin & Token Engineering Commons	*$ 3,500*
2023	**Nethermind Internship Stipend**, Ethereum Foundation Ecosystem Support Program	*$ 3,000*
2022, 2023	**Phoenix Graduate Merit Scholarship**, University of Chicago	*$ 52,000*
2021	**MAP Research Grant**, Grinnell College	*$ 3,000*

Languages and Tools

Computing languages: Python, SQL, Solidity, Matlab, Stata, Julia, LaTeX

Libraries: tensorflow, sklearn, spark, flask, pandas, numpy, scipy, matplotlib, plotly, seaborn, mesa, networkx, solara, streamlit, langchain, openai

Platforms & tools: Git/Github, Dune, Flipside, AWS, Conda, Google Colab, Heroku, MPI, OpenCL

Natural languages: Chinese Mandarin (native), English (fluent), French (beginner)