Niuniu Zhang

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Education

May 2023	University of Pennsylvania, MA Applied Mathematics (AMCS), Philadelphia, PA
May 2021	New York University, MA Visual Arts Administration, New York, NY
June 2019	Union College, BS Mathematics, summa cum laude, Schenectady, NY

Articles

Under Review / Working Papers

1. "Crypto Wash Trading: Direct vs. Indirect Estimation", Falk, B., G. Tsoukalas, and N. Zhang (2023)

2. "Economics of NFTs: The Value of Creator Royalties", Falk, B., G. Tsoukalas, and N. Zhang (2022)
   - selected and presented at March 2023 Symposium of Crypto & Blockchain Economics Research Forum (CBER). [video]

Theses

3. "Being An Artist Is Hard: Navigating the Dynamics of Money and Power", Zhang, N. (2021)

4. "Category Theory and Universal Property", Zhang, N. (2019)

Research Experience

Penn Engineering, University of Pennsylvania, Philadelphia, PA

Su. 2022-pres.	Research Assistant, Crypto and Society Lab (CASL) Advised by Prof. Brett Hemenway Falk and Prof. Gerry Tsoukalas I conduct empirical analysis of blockchain data and develop economic models to fit the data, topics include NFT royalties and wash trading. See [1,2].

The Wharton School, University of Pennsylvania, Philadelphia, PA

Su. 2023-pres.	Research Assistant, Stevens Center for Innovation in Finance Advised by Prof. David Musto and Prof. Brett Hemenway Falk I refine Web3.py based data processing tool to facilitate Ethereum data scraping that contributes to an open-access DeFi research database - data samples: [uniswap, usdc, usdt].

Penn Art & Science, University of Pennsylvania, Philadelphia, PA

F. 2023-pres. Research Assistant, Department of History
Advised by Dr. Maylis Avaro and Prof. Marc Flandreau
I extract and analyze Ethereum blockchain logs and mempool data (+100GB) to investigate potential contagion effects during the Terra market crash in 2022.

Steinhardt School, New York University, New York, NY

2020-2021 Master's Thesis, Department of Art and Art Professions
Advised by Prof. Amy Whitaker
I investigated the economic challenges artists face and the transformative potential of blockchain for creative careers. See [3].

Teaching Experience

Penn Engineering, University of Pennsylvania, Philadelphia, PA

Sp. 2024 Teaching Assistant, EAS 5830 Blockchains, Graduate
Supervised by Prof. Brett Hemenway Falk
Sp. & F. 2022 Teaching Assistant, CIS 515 Fundamentals of Linear Algebra and Optimization, Graduate
Supervised by Prof. Jean Gallier

The Wharton School, University of Pennsylvania, Philadelphia, PA

F. 2023 Coding Instructor, Finiverse Student Loan Calculator [media] [material], High School
Supervised by Prof. David Musto

Relevant Coursework at Penn

Mathematics

Complex Analysis and Measure Theory (MATH 6080), Real and Functional Analysis (MATH 6090), Probability Theory (STAT 9300), Stochastic Processes (STAT 9310), Graduate Algebra (MATH 6020), Commutative Algebra (MATH 6030), Representation Theory (MATH 5200)

- passed the departmental written prelimniary exam in Analysis, Algebra, and Probability

Computer Science

Theory of Computation (CIS 5110), Cryptography (CIS 5560)

Awards & Honors

2019 Phi Beta Kappa (ranked top 5%)
2019 Departmental Honors in both Mathematics and French

Technical Skills

Python, C, C++, Bash, Mathematica, MATLAB, R, LaTeX