

FOREST ZHANG

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RESEARCH INTERESTS

Theoretical computer science and game theory

- Algorithmic mechanism design
- Interplay between cryptography and game theory

EDUCATION

University of Michigan, College of Engineering - Ann Arbor, MI Aug. 2024 – Dec. 2025
M.S. in Computer Science GPA: 4.0/4.0

University of Michigan, College of Engineering - Ann Arbor, MI Aug. 2019 – Dec. 2022
B.S.E. in Computer Science, with Honors | Minor in Mathematics GPA: 3.95/4.0

- **Awards:** University Honors, Dean's List, William J. Branstrom Freshman Prize, James B. Angell Scholar
- **Relevant Coursework:** Algorithmic Game Theory, Advanced Cryptography, Algorithms, Randomized Algorithms, Advanced Operating Systems, Machine Learning, Advanced Compilers, Intro to AI, Quantum Computing, Modern Algebra, Programming Languages, Computer Game Development

RESEARCH

Beyond Incentive Compatibility: Rational Harm-Proof Transaction Fee Mechanisms

with Ke Wu and Elain Park | submitted to *STOC 2026*

- Introduces “Rational Harm-Proofness,” which protects honest parties from rational deviations, as a desirable property of transaction fee mechanisms and characterizes its (in)feasibility in the plain and MPC-assisted model

Game-Theoretically Fair Coin Toss with Arbitrary Preferences

with Ke Wu | in *ASIACRYPT 2025*

- Characterizes the (in)feasibility of game-theoretic fair coin-toss protocols for players with arbitrary preferences

Opponent Indifference in Rating Systems: A Theoretical Case for Sonas

with Greg Bodwin | in *ITCS 2023*

- Introduces “opponent indifference” as a desirable, strategy-proof property of rating systems and characterizes the (in)feasibility of such rating systems

TALKS

Game-Theoretically Fair Coin Toss with Arbitrary Preferences

- ASIACRYPT Dec. 2025
- University of Michigan, Theory Lunch Nov. 2025

Opponent Indifference in Rating Systems: A Theoretical Case for Sonas

- ITCS Jan. 2023

TEACHING EXPERIENCE

Teaching Assistant University of Michigan

- EECS 575: Advanced Cryptography - Instructor: Chris Peikert Fall 2025
- EECS 475: Intro to Cryptography - Instructor: Mahdi Cheraghchi Winter 2025
- EECS 475: Intro to Cryptography - Instructor: Ke Wu Fall 2024
- EECS 475: Intro to Cryptography - Instructor: Mahdi Cheraghchi Winter 2022
- EECS 203: Discrete Mathematics - Instructor: Emily Graetz Fall 2021
- EECS 203: Discrete Mathematics - Instructor: Emily Graetz Winter 2021
- EECS 203: Discrete Mathematics - Instructor: Emily Graetz Fall 2020

PROFESSIONAL EXPERIENCE

Quantitative Trader

Feb. 2023 - Aug. 2024

SCALP Trade

Chicago, IL

- Managed the development of all quoting strategies used in the firm by automation and traders
- Analyzed market data in Python to identify and capitalize on trading opportunities
- Traded US Equity and Index options daily
- Introduced a new algorithm for sending orders that exploits exchange rules to save a projected \$350,000+ annually
- Built GUIs in C# to visualize risk and interact with automated strategies in real-time, making it easier for traders to make quick decisions in extreme circumstances

Autonomous Data Collection Intern

June 2022 – Aug. 2022

General Motors

Warren, MI

- Developed a new routing algorithm in Python that allows for an arbitrary distribution of road types, boosting data precision for machine learning and reducing planning time by 2+ hours
- Designed a new web scrapping algorithm in Python to automate event information (location, date, time) collection for locating large gatherings, improving the feasibility of accounting for this complex edge case in perception data

Systems Engineering Intern

June 2021 – Aug. 2021

General Motors

Warren, MI

- Programmed scripts in C# that use config files to automatically translate data from Excel spreadsheets to a JSON format, streamlining the development of a new web application
- Created a proof of concept using Tom Sawyer to highlight the program's ability to efficiently create interactive and customizable graphs, increasing company investment in this direction

ACTIVITIES

Algebra 1 Math Support Volunteer

Sept. 2025 – Present

- Helped high school students work through practice problems and stay on task

Chess Club Officer

Sept. 2021 – Dec. 2022

- Instituted a marketing chair for the club, adding nearly 100 members in a single semester
- Began hosting club tournaments to increase involvement and raise revenue

Triangle Fraternity Marketing and Academic Chair

Sept. 2021 – April 2022

- Produced artwork and advertisements for the fraternity's charity and recruiting events
- Assembled a database of classes that brothers have taken as an academic resource
- Tutored brothers in discrete mathematics

TECHNICAL SKILLS

Languages: Python, C/C++, C#, SQL, Javascript, OCaml, HTML/CSS, MATLAB, MakeFile, TeX, Assembly

Developer Tools: Git, VS Code, Visual Studio, Xcode, Terminal, Microsoft Office, Linux, Overleaf, Flask, React, REST APIs