

ARISTO LIU

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EDUCATION

- Expected 12/26 **NEW YORK UNIVERSITY** New York, NY
The Courant Institute of Mathematical Sciences
M.S. in Mathematics in Finance
- **Expected Coursework:** computing in finance, financial securities and markets, stochastic calculus, risk and portfolio management
- 08/21 - 05/25 **COLUMBIA UNIVERSITY** New York, NY
B.A. in Mathematics and Astrophysics (Double Major)
Minor: Computer Science
- **Coursework:** modern algebra, real analysis, probability theory, modeling, discrete math, data structures, machine learning, simulations, modern astrophysics, quantum mechanics, electricity and magnetism
 - **Honors/Awards:** Dean's List

EXPERIENCE

- 05/24 - 03/25 **AMERICAN MUSEUM OF NATURAL HISTORY** New York, NY
Undergraduate Student Researcher and Team Coordinator (Python)
- Analyzed large-scale galaxy simulations to study interstellar magnetic fields using Python, employing data processing, visualization, and statistical modeling techniques
 - Organized and led team of NY undergraduate student researchers in collaboration with Stanford research group by coordinating meetings and delegating simulation and analysis tasks
 - Designed and presented research poster at 245th American Astronomical Society meeting (Jan 2025) for audience of astronomy professors and graduate students
- 08/22 - 09/23 **COLUMBIA UNIVERSITY** New York, NY
Undergraduate Student Researcher (Python)
- Developed custom Python tools to run and analyze simulations of black hole spin evolution, using numerical integration and data visualization techniques
 - Studied advanced simulation techniques and recent astrophysical literature
 - Refined prior estimates of black hole equilibrium spin by applying new computational methods and drafted research paper on results

PROJECTS

- 06/25 - Present **INDEPENDENT RESEARCH** New York, NY
Algorithmic Trading Project (Python)
- Developed, backtested, and refined algorithmic trading strategy, achieving simulated annualized returns of 9%
 - Analyzed performance of trading strategy using graphs, Sharpe ratio, and volatility
 - Gained insight into limitations of backtested strategies
- 10/23 - 12/23 **COLUMBIA UNIVERSITY** New York, NY
N-Body Integrator (Python)
- Implemented IAS15 integrator, a 15th order integrator for gravitational dynamics
 - Conducted Monte Carlo simulations on varied initial conditions to study effect of stellar fly-bys on binary systems ($N=3$)
 - Wrote report on results, discussing methodology and physical implications

COMPUTATIONAL SKILLS / OTHER

Programming Languages: Python, JavaScript, Java, LaTeX, Microsoft Excel

Languages: English (native), Mandarin (fluent), Spanish (conversational, passed Columbia University requirement)

Honors: FIDE Master Title (International Chess Federation), National Master (US Chess Federation), Pan-American Youth Chess Champion, World Amateur Team Championship: "Top College Team" Captain

Leadership: Columbia Chess Club President (06/22-05/24)

Other: US Citizen