

Linbo Gong

linbog@andrew.cmu.edu |(412) 550-6495| <https://linkedin.com/in/linbo-gong> | <https://github.com/linbo271828-cell>

EDUCATION

Carnegie Mellon University

Pittsburgh, PA

B.S. in Computational and Applied Mathematics

May 2029

- **Selected Coursework:** Introduction to Mathematical Finance, Principles of Imperative Computation, Mathematical Concepts and Proofs, Matrices and Linear Transformations

American School of Warsaw

Warsaw, Poland

International Baccalaureate Diploma Program and High School Diploma

May 2025

RESEARCH & PROJECTS

Cookie Clicker Stock-Market Autotrader

February 2025 - Present

- Authored a technical plan and math write-up for a POMDP trading agent using OU-based bands and a particle-filter (PF) belief model; specified state, actions, costs, and evaluation protocol
- Building a tick-accurate market simulator (prices, regimes, transaction costs, inventory) with reproducible tests; implementing cost-aware band controller and PF-band controller
- Designing experiments vs. baselines (No-Trade/Buy&Hold) with paired seeds; reporting PnL, drawdown, turnover, and fraction-of-upper-bound (planned)
- Draft manuscript available on request; code to be open-sourced upon MVP completion

Generating Functions in Partition Theory

May 2024 - November 2024

- Developed a generating-function derivation of classic partition identities and the pentagonal-number recurrence; validated small-n counts against reference tables
- Discussed algorithmic implications (dynamic programming vs. recurrence), time/space trade-offs, and limits of naive enumeration

LEADERSHIP EXPERIENCE

Mathematics Competitions Program

Warsaw, Poland

President / Coordinator

August 2024 - June 2025

- Founded the school's first contest pipeline (AMC 10/12, AIME, Waterloo); recruited and guided ~20 students across grades 9–12
- Ran weekly problem-solving labs (mock contests, topic clinics) using curated sets from HMMT Feb, Tournament of Towns, Iranian Geometry Olympiad, AoPS, JBMO, and "104 Number Theory Problems"
- Resulted in 7 AIME qualifiers (2 in the first year, 5 in the second), including 1 USAMO qualifier; 2 Waterloo Euclid Distinctions

VEX Robotics

Warsaw, Poland

Lead Programmer / Co-Robot Designer

October 2020 - February 2025

- Co-designed drivetrain & gear ratios in CAD (weight, CG, torque-speed tradeoffs); delivered ~14% faster cycle times with ~9% lower mass
- Built odometry + PID motion control (drive/turn) with an auto-tuner; improved autonomous path error from ~8 cm → ~3 cm (~60% decrease) and raised auton points by ~+10 per match
- Introduced fault-tolerance (voltage-sag guards, thermal derate curves, battery SoC gate); cut mid-match faults from 2 → 1 per event (50% decrease) over the season

Relay for Life

Warsaw, Poland

Event Organizer

January 2024 - June 2024

- Organized a walkathon for 215+ community members, raising ~\$15,000+ to donate to Children's Hospital
- Coordinated it with high-school clubs, external vendors, sponsors & school marketing & finance departments
- Established connection with the Children's Hospital Director for potential future collaborations with the school

AWARDS

United States of America Mathematical Olympiad (USAMO) Qualifier

March 2025

- ~250-300 participants qualify each year out of ~100,000 participants (USAMO Index: 260.5/300)

American Invitational Mathematics Examination (AIME) Distinguished Honor Roll

February 2025

- Scored in the top 1% of participants on the AIME (13/15)

American Mathematics Competitions 12 (AMC 12) Distinction

November 2024

- Scored in the top 5% of participants on the AMC 12 (130.5/150)

American Scholastic Mathematics Association (ASMA) Highest Scoring Student Award

April 2024

- Top scorer of the Junior division in the ASMA contest

SKILLS & INTERESTS

Programming Languages: Python, SQL, C++, Java, PHP, JavaScript

Libraries & Tools: Numba, GitHub, pandas, NumPy, MATLAB, matplotlib, CAD, Excel

Interests: Poker, Pool, Volleyball, Boulderling