CHARLES LIU

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EDUCATION

Washington State University (2023-2027) - Bachelor of Computer Science and Math - 4.00 GPA

Pullman, WA

Relevant Courses: Program Design and Development (C), Data Structures (C++), Advanced Data Structures, Linear Algebra, Calculus III, Differential Equations, Design and Logic of Circuits, Graph Theory, Modern Algebra, Linear Optimization

ACHIEVEMENTS

1st Place Agath0n - 2025

- Competed in 48-hour AI building hackathon hosted by Washington State University's AgAID Institute with team of six
- From no experience in AI and large data processing, won against college teams (including graduate and PhD students)
- Learned Python, pandas, numpy. Tensorflow, SciKit Optimize, and more.

3rd Place CrimsonCode MLH Hackathon - 2025

- Competed in 24-hour hackathon under the prompt "Art and Programming"
- Built AR mobile application "DecoSavvy" that let's user visualize decor virtually. Started from no experience with Unity/AR.

1st Place 2024 Crimson Game Jam - Frostbite Farms

- Competed in 72-hour game jam hosted by Washington State University
- Only high school team in a field of college teams

1st Place WA05 Congressional App Challenge - 2023

- Submitted application "PashHash" that uses Argon2 to encrypt keywords and domain names to generate and re-generate secure passwords.
- Learned web-development and API sourcing.

National Merit Finalist - 2025

- Scored perfect PSAT Score 11th grade (1520/1520), 10th grade (1490/1520)

ICDC (International Career Development Conference) Qualifier x2 - 2024,2025

- Operated and worked as employee in DECA club's student snack store
  - Tripled revenue from previous year hitting new sales record, raised funds for DECA club to compete in competitions
  - Improved layout efficiency, added digital payment methods, boosted advertisements, added social media, and more.
- Made 20-page independent business plan Cat Carp Co.
  - Presented about business proposal Cat Carp Co., a business that turns invasive carp into gourmet cat food while composting waste, to judges mimicking "investors" at **SCDC**, placed **3rd** with perfect presentation score.

AIME (American Invitational Mathematics Examination) Qualifier x2 - 2024,2025

- Scored top 15% nationally on challenging competitive math exam, AMC 12.

RESEARCH

Intricacies of Pairwise Modular Multiplicative Inverses in Lucas Numbers

- In this research, I classified all pairs of Lucas numbers (a sequence similar to Fibonacci) that have pairwise modular multiplicative inverses that are also Lucas numbers using mainly linear algebra. This has vast implications in binary cyclotomic polynomials and knot theory.

Publication Link: https://scholar.rose-hulman.edu/rhumj/vol25/iss2/9

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