

Roger Yang

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EDUCATION BACKGROUND

Glenbrook North High School, Northbrook, IL

Expected Graduation Date 05/2024 | Cum GPA: 4.0/4.0 | Weighted GPA: 5.0/5.0 | SAT: 1600

Relevant Coursework:

AP Physics I	Exam score: 5
AP Physics C: Mechanics	Exam score: 5
AP Physics C: Electricity and Magnetism	Exam score: 5
AP Calculus BC (self-studied through AoPS Calculus class)	Exam score: 5
AP Computer Science A	Exam score: 5
AP Statistics	Exam score: 5
AP Macroeconomics	Exam score: 5
AP Language and Composition	Exam score: 5
AP US History	
AP Chinese Language and Culture	
Advanced Algorithms and Data Structures, Honors	2022-2023
Advanced Topics in Mathematics (Multivariable Calculus), Honors	2022-2023
Stanford Online High School, Light and Heat UP055	2021-2022

Upcoming Coursework (2023-2024):

AP Literature
AP US Government and Politics
AP Comparative Government and Politics
AP Chemistry
AP Biology
AP Psychology
Linear Algebra and Real Analysis through Harvard Extension School

AWARDS AND HONORS

Silver Medal, USA Physics Olympiad	2022, 2023
Bronze Medal, USA Astronomy and Astrophysics Olympiad	2023
Ranked 26 th in global PhysicsBrawl competition out of over 900 teams	2023
Three-time ICTM State Champion	2021, 2022, 2023
Ranked 6 th individually and 2 nd in two-person competition in division in ICTM state competition	2023
Ranked 2 nd individually in ICTM regional competition	2023
AIME qualifier	2023
Ranked 2 nd in Midwest region in PhysicsBowl	2021, 2022

RESEARCH:

- Interned at University of Maryland's Cooperative Institute for Satellite Earth System Studies program – predicted future natural disasters using machine learning techniques under the supervision of Dr. Peng Yu and Dr. Jingjing Peng, work helped secure more funding for advisors from NOAA (6/2023-present)
- Modeling The Future Competition: wrote a research paper on the effects of mesoscale eddies on dispersion of oil spills in the Gulf of Mexico (2023)
- Physics Unlimited Explorer Competition: participated in an international, team-based competition centering around synthesizing research on semiconductors (2023)

EXTRACURRICULAR ACTIVITIES:

- Vice President, Math Team, Glenbrook North High School – organized various social events like new years Jeopardy games, helped teach AMC 10/12 preparatory courses, wrote the majority of student-run annual Junior High Math Contest drawing students from five local major middle schools (2020-2023)
- Board Member, Science Club, Glenbrook North High School – facilitated interest and organized registration of around 20 students for various science competitions like AAPT's PhysicsBowl and the F=ma exam (2020-2023)
- Editor of the Simple Studies blog – wrote and edited articles giving academic advice for socioeconomically

- disadvantaged students (2023)
- Hour of Code volunteer – helped introduce basic programming to high school students and delivered presentation about the importance of coding in the modern era (2023)
- Tutor for school Math Resource Center – helped students with a variety of assignments in math, ranging from Geometry to Calculus (2021-2023)
- Member of 2023-2024 National Honors Society – volunteered as a chaperone for the Northbrook Symphony Orchestra's *Strings of Hope* concert with approximately 1,000 attendees (2023)
- Volunteered as a student advisor for the Maple middle school's math team – taught middle schoolers topics in competition math (2022-2023)
- Volunteered as a student teacher for Maple middle school's summer school – taught incoming middle schoolers topics in competition math and helped foster interest for the middle school math team (2021-2022)
- Teaching assistant for AP Physics at North Shore Chinese School (2022)

SKILLS:

- Mathematical fluency up to and including multivariable calculus, linear algebra and group theory
- Fluency in physics including all of the standard undergraduate curriculum (classical mechanics, electricity and magnetism, thermodynamics, statistical mechanics, optics, semi-classical mechanics and special relativity)
- Proficient in Java and Python; experienced with machine learning models like Neural Random Forest, UNet and Convolutional Long Short Term Memory; experienced with statistical models like Support Vector Machine and Logistic Regression
- Excellent communication skills - was chosen to give a speech to entire middle school as valedictorian