
Education

Los Altos High School, Los Altos, CA - 2023-2027

Weighted/Auditioned Coursework:

12th: AP Literature, Multivariable Calculus and Linear Algebra, AP Physics C Mechanics, AP Physics C Electricity and Magnetism, AP Chemistry, AP Government, AP Macroeconomics, Advanced Scientific Investigations (ASI)

11th: AP Lang (5) AP Calc BC (5), AP Physics (5), AP US History (5), AP Spanish Lang (4), Advanced Scientific Investigations (ASI)

10th: World Literature H, Trigonometry H, Chemistry H, AP European History (4), AP Computer Science (5), Spanish 3 H, Chamber Orchestra

9th: Algebra 2 H, Biology H, Spanish 2 H, Orchestra

AP scores are inside parenthesis

Online Lessons

- **Physics Informed Neural Networks** - Dr. Mohammad Samara, April - August 2026
PyTorch, FDM Numerical Solutions, PINNs Solutions, and DeepXDE Solutions
- **The Finite Element Method** - University of Michigan, Jun - July 2025
Weak Form calculations, [Deal.II](#) framework, Boundary Conditions, Heat/Diffusion equations, and Elasticity
- **Vector Calculus for Engineers** - Hong Kong University, Aug 2024
Vectors, gradients, divergences, curls, multivariable integration, polar, cylindrical and spherical coordinates, line and surface integrals, the gradient and divergence theorems, and Stokes' theorem
- **Differential Equations for Engineers** - Hong Kong University, Jun 2024
First and second-order differential equations, the Laplace transform and other series solution methods, systems of differential equations, and partial differential equations
- **Matrix Algebra for Engineers** - Hong Kong University, Jul 2024
Matrices, systems of linear equations, vector spaces, and eigenvalues/eigenvectors
- **Introduction to Mechanical Engineering** - Georgia Tech, Apr - Jul 2024
Modeling and analysis of static equilibrium problems, real world engineering applications, and problem solving.

John Hopkins CTY - Jul - Aug, 2023

Probability and Game Theory: Explored concepts like dominance, mixed strategies, utility theory, nash equilibrium and n-person games to apply to real-world situations

Research

[CIMS Lab \(Dr. He\) Internship](#) - University of Minnesota Twin Cities - June 2026 - Present

- Generative AI for Topology-Optimized Metamaterial Unit Cells
- Build a [metamaterial generator](#) algorithm for inverse-design of unit cells with targeted stiffness, volume fraction, and poisson's ratio

[Reconfigurable Analysis with Miura-Ori](#) - ASI, LAHS - June 2025 - June 2026

- Investigated how engineered defects in Miura-Ori tessellations enable programmable and reconfigurable mechanical behavior
- Designed and analyzed four defect geometries (2×4 and 4×2 box pleats, half- and full-waterbomb bases) to create localized stiffness regions that control deformation modes
- Developed a [custom force analysis and visualization](#) algorithm to quantify deformation engineering strain across folded structures

Projects

Accessible Structural Force Analysis ([FEAI.APP](#)) - Oct 2025 - Present

- Built a physics-informed surrogate modeling pipeline for structural force analysis, reducing reliance on computationally intensive FEA solves.
- Generated parametric elasticity datasets with deal.ii and trained PINNs in DeepXDE to learn displacement and stress fields under varying loads and boundary conditions.

Finite Element/Engineering CAD Course Instructor - SciConnect - Nov 2025 - Present

- Designing courses on FE analysis and CAD for Science Olympiad participants nationally

[Bell.plus](#) - (10K visitors daily) Lead Developer - Dec 2024 - present

- Worked mainly on the following features: calendars, reminders, and schedule sharing

[T.R.I.M.](#) - Presidential AI Challenge - Nov 2025 - March 2026

- Taxpayer Resources Information Model
- Developed an app that audits municipal fiscal reports to make it accessible

Robotics FRC - LAHS - Sep 2025 - Jan 2026

- Initiated to provide finite element analysis to increase the structural stability of designs
- Helped identify weaknesses in the robot

Science Olympiad

[Science Olympiad Team](#) - Refounded, President LAHS - Jan 2024 - Present

- Organized team logistics to compete at:
 - 2026-2027: Highlands Invitational, LASSO Invitational, Rickards Invitational, Mason Invitational, Golden Gate Invitational, Stanford Invitational, Santa Clara Regional
 - 2025-2026: Golden Gate Invitational, Stanford Invitational, Santa Clara Regional, Lexington Invitational
 - 2024-2025: Stanford Invitational, Santa Clara Regional
- Participated in: Air Trajectory, Material Science, Entomology, Experimental Design, Hovercraft, Machines, Boomilever, Thermodynamics, and Robot Tour
- Grew team from 0 to over 75 members, and facilitated teamwork to improve team building and competition results
- Total funding raised for the team: \$31,698.84 (Donations, Sponsorships, Stanford grants, LASO, LAHS grants)

- Communicated with advisors, state directors, and the Stanford Coaching Team to handle logistics, funding, and preparation
- Hosted a [Summer Training Program](#) in 2025 & 2026 for 100+ hours with 70+ participants.

[Los Altos Science Olympiad Invitational](#) - Founder, Tournament Director - Apr2025 - Present

- Worked with the Science Olympiad National Office to officialize the tournament
- Managed logistics to support with website, registration, payments, rules/guidelines, and the awards ceremony
- Recruited and managed a team of over 40 volunteers to operate 52 unique events
- Over 900 participants nationally
- Event Supervisor for Machines & Experimental Design, Thermodynamics, and Boomilever

[Scio.ly](#) - Lead Developer (5k + daily users) - July 2025 - Present

- Lead development for a Science Olympiad practice question site
- Partnered with Southern California Science Olympiad
- Coded a discord bot used by 976+ servers (school teams nation wide)

[Teamy](#) - Lead Developer (200 users) - October 2025 - Present

- Developed a platform to manage club/tournament logistics
- Formed team of 4 developers

School Activities

Varsity Tennis

Co Captain, 2 yrs (Feb 2026 - Present)

Singles 4, 4 yrs (Feb 2024 - Present)

Physics Club

Co President (Aug 2026 - present)

Vice President (Aug 2025 - Jun 2026)

Public Relations Officer (Aug 2024 - Jun 2025)

Member (Aug 2023 - present)

- Involved with the advertisement/registration/funding for the Physics Bowl and $F=ma$ competitions.
- Organized physics lessons for weekly meetings
- Arranged guest speakers and events

LAHS String Orchestra

Violin 2 Section leader (Sep 2023 - Jun 2025)

Auditioned Orchestra (Sep 2024 - Jun 2025)

- Was responsible for preparing the 2nd violin section for 8 annual school concerts.

Paid Positions

Momentum Tennis Academy

Tournament Coach (Mar 2024 - present) - Coach for Junior Tennis Teams at Sectionals

Pro Coach (Mar 2024 - present) - Responsible for Foothill College Location

Lead Coach (Dec 2024 - Mar 2024)

Assistant Coach (Oct 2024 - Dec 2024)

- Tennis coaching for 30+ player attendance weekly

- Recruited 5 assistant coaches, manage coaching hours, supervise training activities

Private Tennis Coach

Group Camps & Private Lessons (Summer 2022 and Spring Break 2023)

Events

LAHS STEAM Week - Presenter, LAHS - Oct 2027

- Planning to present my research project in the LAHS ASI program

UMN Frontiers of Generative AI Workshop - Attendee, University of Minnesota - Aug 2026

- Listened to panels on AI trends, applications, road blocks, and opportunities
- Asked questions to researchers and professors to receive feedback on my PINN project.

East Bay Origami Convention - Exhibitor, Volunteer, Presenter, UC Berkeley - Mar 2024, 2025, 2026

- Ran sessions to teach my original origami designs
- Contributed designs to the convention book
- Exhibited my origami projects at the convention
- Volunteered to set up the event and help the classes run smoothly

Origamido® Internship - Haverhill, MA - Jun 2024

- Worked with paper artists Micheal LaFosee and Richard Alexander to produce 100+ sheets of paper. Gained experience on the science of papermaking.

San Jose Tech Challenge - Team Competition, Tech Museum

- 2023: Constructed a light-weight structure that blocks high speed wind. Used folding techniques to make it compact and easily portable.
- 2018: Built a hovercraft that functions under various conditions and terrains

Origami USA, Foldfest - 2021, 2022

- 25-hour folding marathon
- Connected with folders from around the globe.

Volunteering

ACEing Autism

Volunteer (Sep 2023 - present)

- Taught tennis to kids with autism weekly, trained new volunteers (over 120 hours)

Origami Workshop - Organizer/Instructor, Los Altos Library - April 2024 - Dec 2024

Organized sessions and taught kids monthly. 20-30 average attendance. Registered as an official Origami USA group.

Peer Tutor - LAHS - Jan 2025 - Present

- Tutor students in math/science/CS before school on Wed/Fri (80 hours)

Awards

Science

- Synopsys Santa Clara Valley Science & Engineering Fair 2nd Place (Physical Science & Engineering Category – “Programmable stiffness regions on metamaterials with reconfigurable behavior”), 2026
- 5x Science Olympiad Medalist (Air Trajectory, Boomilever, Robot Tour, Machines)
Santa Clara County Regionals, 2025, 2026 (2x)
Lexington SO, 2026 (2x)
- Scioly.org Most Helpful High Schooler Recognition (2026)
- Presidential App Challenge regional qualifier (T.R.I.M.), 2026
- Tech Challenge, Best Performance (Survive the Storm!) - The Tech Interactive, 2023

Math

- AMC10 AIME Qualified - MAA, 2025
- AMC8 school 1st place and honor roll - MAA, 2023
- Purple Comet Math, 1st - Egan Jr High, 2023
- AMC8 school 2nd place and achievement roll - MAA, 2019

Tennis

- Tennis District champion - USTA 2026, 2025, 2024(3x)
- Tennis Sectional champion - USTA 2023, 2022
- Tennis Norcal semifinals - UTR 2022

LAHS Student Awards

- Scholar Athlete Award (4.0 unweighted GPA) - LAHS, 2025, 2024
- Best Communicator Award - LAHS, 2024

Skills

- Physics-Informed Machine Learning
 - DeepXDE
 - Nvidia PhysicsNeMo Symbolic
- FE (Finite Element) Analysis
 - ANSYS
 - [Deal.II](#) library
- CAD: Space Claim, OnShape
- Coding: Python, PyTorch, Java, Type Script, C++
- Oriedita (box-pleating origami design)
- API Engineering
- AI Prompt Engineering
- Data organization/analytics