PHILENA LIU

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EDUCATION

Massachusetts Institute of Technology *Cambridge, MA*
Major: Mathematics with Computer Science May 2024
Coursework: Algorithms (6.006), Machine Learning (6.036), Stochastic Processes (18.615), Statistics (18.650), Fundamentals of Programming (6.009), Real Analysis (18.100B), Probability and Random Variables (18.600), Weblab, BattleCode
Extracurricular Activities: Harvard-MIT Mathematics Tournament (HMMT): Outreach Officer, Borderline (Augmented Reality Murals): Publicity Co-Chair, Asian Dance Team, Code For Good

Adlai E. Stevenson High School *Lincolnshire, IL*
GPA: 4.00, SAT Superscore: 1600, ACT: 36. May 2020
National AP Scholar, Stevenson High School Ambassador

EXPERIENCE

Gem Software June 2021 - August 2021
SWE Intern *Remote*

· Developed full-stack event form features (custom banner image uploads, improved form validation, automated form submission confirmation emails) and UI/UX improvements using GraphQL, Python, JavaScript, SQL, React.js, and AWS.

Pixonary - https://pixonary.herokuapp.com/ January 2021
Co-Creator *Remote*

· A collaborative take on a traditional drawing game. Created the multiplayer game within 2 weeks using React.js, Google OAuth, Express, MongoDB, Socket.io, Node.js, GitHub, MaterialUI, and CSS.

UTOP - MITx Math Digital Content Development Team September 2020 - January 2021
Digital Math Content Creator *Remote*

· Used Three.js, HTML Canvas, and Mathlets.js to create JavaScript applets for graphics aiding MIT's Multivariable Calculus online class. Created a visualization for a parametric function and its linear approximation.

Program in Mathematics for Young Scientists (PROMYS) June 2019 - August 2019
Camp Attendee, Exploration Lab Member *Boston, MA*

· Proved classic number theory theorems from its fundamental axioms. Researched and presented in a team of 4 on the Fibonacci numbers, with our conjectures and proofs documented in LaTeX and presented to professors and other camp attendees.

Math Outreach October 2018 - March 2020
Organizer *Lincolnshire, IL*

· Co-led school's first math olympiad training program, creating handouts/lectures on inequality proofs. Created and organized with 4 others the school's first Consortium Math Circle, teaching 50 middle school students on introductory modular arithmetic.

AWARDS

Math Prize for Girls (MPFG) 2018, 2019

· Placed 9th out of the top 285 girls in math from across US and Canada in 2018, and tied for 16th out of 268 in 2019 at the largest math prize for girls in the world.
· Qualified twice for the MPfG Olympiad, a 4 hour proof-based exam.

MathWorks Math Modeling Challenge 2020

· Placed 3rd out of the 760 teams participating nationwide.
· Used Excel and MATLAB to model the transition from diesel to electric trucking with the Lotka-Volterra approach.

John Benson Award Winner 2020

· Given to 6 students in the North Suburban Math League, of which over 50 Chicagoland schools participate, who "best exemplifies John Benson's love of mathematics and his passion to share his enthusiasm and knowledge with others."

SKILLS

Technical: Python, React.js, JavaScript, GraphQL, MongoDB, Java, LaTeX, HTML, CSS, Bootstrap, Socket.io, AWS, SQL