# NEIL MALUR

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Current high school junior looking to pursue a computer science major in college. Conducts research in natural language processing, computational biology, and applied machine learning with other interests in math and business.

## Education

**Weston High School**, Weston, MA — Anticipated Graduation June 2021

**Selected Awards**: National Honor Society, Seal of Biliteracy, National Latin Exam Gold Medal (2), AIME Qualifier (2)

**Relevant Coursework**: AP CS, AP Physics C, AP Calculus BC, AP World History, AP US History, AP Latin, DE Economics

**Extracurriculars**: Debate Team (captain, co-founder, varsity), Computer Science Team (president), DECA, Science Team, Math Team, BioBuilderClub, Robotics Team, Latin Club, Garden Club, Badminton Club

**GPA**: 4.00 (unweighted) · 4.60 (weighted)

**SAT**: 800 (Math II) · 800 (Physics)

## Research Experience

### Harvard-MIT Biomedical Cybernetics Laboratory — 2018 – present

Conducting research in computational biology under the mentorship of Prof. Gil Alterovitz and Dr. Insung Na.

- Connected to due to participation in the **MIT PRIMES** Computer Science & Computational Biology program
- Working on improving **clinical trials accessibility** by structuring eligibility criteria using machine learning
- **First author** on two papers produced by the lab, currently awaiting publication

### Independent Student Researcher — 2017 – present

Has completed and is working on a variety of award-winning independent research projects across disciplines.

- **Predicted flu outbreaks** and severity with LSTM networks: won an Honorable Mention at the MSEF Science Fair
- **Political sentiment analysis** on text with deep learning; won the MetroHacks III Best Entrepreneurial Hack Award
- Analyzed student political knowledge to **determine the benefits of lowering the national voting age**
- **Determined problem difficulty** due to its wording and **predicted urban demographics** from satellite imagery

### MIT PRIMES STEP — September 2015 – May 2018

Conducted research in mathematics under the mentorship of Dr. Tanya Khovanova accepted to peer-reviewed journals.

- Selective program to enrich the mathematical knowledge and experience of a small group of 7$^{th}$ – 9$^{th}$ graders
- Conducted **original mathematics research** and coauthored 4 papers: published in **MJUM** and **Math Horizons**

## Work Experience

### Software Developer — March 2019 – present

Currently developing software for both Conjuguemos, a language learning site serving **more than 4.2 million students** and 32,000 schools worldwide, in addition to interning for KTByte, a global computer science education company.

- Introduced, implemented, and maintains **search engine optimization** methodologies for Conjuguemos
- **Developed new features and pages** while upkeeping efficiency and minimizing server load at Conjuguemos
- Works on **frontend website design** and **backend database structuring** to aid teaching at KTByte

### Computer Programming Intern — June 2017 – July 2017

Worked as a programming intern at Columbia Threadneedle, a mutual fund company that manages about $500 billion.

- Developed sites and interfaces with customer-employee database integration using the Salesforce cloud

## Academic Achievements

### Program in Mathematics for Young Scientists — June 2019 – August 2019

Attended the PROMYS program, a highly selective and intensive program in mathematics.

- **Intensive mathematical study** with challenging daily problem sets in number theory
- Took courses in Algebra and Probability while **performing a lab** on Chebyshev polynomials of the first kind
- Invited to be among about 20 advanced students conducting **original research in mathematics** in 2020

### United States of America Computing Olympiad Gold Competitor — January 2017 – present

International competition in computer science used to select the US team to the International Olympiad in Informatics.

- Placed in and maintained a position in the **top 500 global pre-college competitors** in USACO (>5000 total)
- Uses **standard workplace algorithms**, such as Fenwick Trees, dynamic programming, and disjoint-sets

### DECA — 2017 – present

International competition in business, finance, and marketing to cultivate future leaders.

- **International Career Development Conference qualifier** for Business Finance in 2019 and 2020 (<5% qualify)
- **2$^{nd}$ and 6$^{th}$ place in Business Finance** at the Massachusetts State Career Development Conference