Viraj Singh

Princeton, New Jersey
v@virajsingh.com

Academic Profile

Princeton High School, Princeton, NJ Class of 2023
Unweighted GPA: 4.0; Weighted GPA: 4.61/4.0
ACT: 35 (Composite) (Reading: 36; English: 34; Math: 35, Science: 35)

AP Scores: AP U .S. History (5), AP Calculus BC (5), AP Computer Science A (5), AP Physics I (5), AP World History (5)

AP/Post AP Courses: AP U.S. History, AP Calculus BC, AP Computer Science A, AP World History, AP Physics 1, AP Spanish, AP Physics C, AP Statistics, Multivariable Calculus/Linear Algebra, Data Structures & Algorithms, Sociology Accelerated

Technical Skills: Java, Python, Algorithms and Data Structures

Proficient in Languages: English, Spanish, Hindi, Punjabi

Honors

- First place in Science Olympiad (Astronomy) in New Jersey state competition (2022).
- AP Scholar with Distinction

Extra Curricular Activities

Academic

RESEARCH :

Independent Research through Polygence **Summer 2022 - Present**

- Investigating if the sentiment towards law enforcement (police) has changed over time in pop culture. In particular, considering a rap lyrics dataset and using machine learning, natural language processing, and sentiment analysis to investigate if there is a positive or negative association with law enforcement and how this has changed over the last few decades.
- Planning to submit a paper to Regeneron Science Talent Search
- Tool useds: JAVA, Python, Google Collab

Princeton High School Research Program (Selected as a sophomore) **2020 - Present**

- Reading research papers, writing literature reviews, and exploring the scientific method. Read papers from N-Dimensional Manifolds to immune system papers about COVID-19 and neutrophils.
- DNA extraction of the isopods to classify and discover new species.
- Collaborating with the scientists from Princeton Neuroscience Institute to simplify published scientific papers and make them available to school children

STEM ACTIVITIES:

PHS Machine Learning and Artificial Intelligence Club, Founder and President **2021 - Present**

- https://mlphs.github.io/
- Introduced high schoolers to Artificial Intelligence & Machine Learning concepts, bridge the gap between theory and practice, and actively discuss ethical AI.
- Developed multi-lesson curriculum; held lessons every week
- Developed several projects using Google Colab to provide club members the opportunity to apply theory to practice.

For example, created a project where students trained a neural network on handwritten digits. Each student handwrote a digit themselves, gave it to the model, and saw how well the model classified their digit.
- Facilitated the discussion of ethics in machine learning and artificial intelligence, and have created a club division dedicated to this cause.

HackPHS, Director - AI for social good **2021 - Present**
- https://hackphs.tech/
- Designed and led a neural networks workshop during the hackathon.
- Constructed a panel of judges for the hackathon to judge the hackathon projects for the HackPHS AI for the social good award.

PHS Science Olympiad, Captain (Astronomy) **2020 - Present**
- 1st place at State Tournament (2022)
- Other Events: Ornithology, Experimental Design, Sounds of Music (Physics and Music)

Bridge USA, Officer. **2021 - Present**
- Led lunchtime discussions of political and social issues such as abortion, gender privilege, gun control, role of government, unitary executive theory. Goal to have open and honest discussions, Socratic style about controversial topics.

PHS Philosophy Club **2020, 2022**
- Pursued Philosophy interest by watching YouTube videos, and reading lecture series (Add topics) throughout subsequent summer

Community Service

STEM ROOTS (LINC Leader) **2021 - Present**
- STEM Roots' goal is to ignite a passion for STEM and STEM literacy among children while breaking stereotypical barriers e.g. socio-economic situation, race, and gender.
- Selected as a LINC leader by my high school since my junior year, have continued to lead a group of high school students to teach STEM topics to underprivileged children at the Henry Pannell Center.
- Teach in a fun way by creating and conducting hands-on experiments based on STEM topics.
- During the pandemic, created a virtual version of the program. Worked with the school, coordinated with the program director, sent the materials to the children every week, and conducted virtual experiments via Zoom to continue to fuel the passion for STEM.

Community Park Elementary School STEM Expo **2021 - present**
- Taught 250 children about the Immune System using an interactive game of tag to simulate an infection. Explained how bodies fight off infection, and why vaccines keep people healthy.

Performing/Visual Arts

PHS Classic Films Club, Officer **2021 - 2022**
- Watched and analyzed Classic films, primary 1950s and French New Wave
- The movies highlighted were The Godfather, Some Like It Hot, Breathless, Dr. Strangelove, Airplane, The Naked Gun, Birdcage, Casablanca, The Mirror, etc.

Writing a Movie:
- Co-wrote a film with a fellow high school friend, Luca Balescu, titled "Noise."
- Played a role in the film

Music Appreciation : Listening to albums, analyzing lyrics, searching for different production elements

OTHER SKILLS/INTERESTS

Hobbies: Pencil collection, Biking, Piano, Stand-up Comedy fan