

Ayush Nayak

I am a High School Junior an astronomer at heart, but one who also loves coding, chemistry, math and biology.

Experience and Projects

Researcher – UCSD Supercomputer Center

One of two sophomores selected out of 50+, I worked on discovering new correlations between HCV and HBV, and it's effect on inducing cancer, by leveraging big data and using Machine Learning models.

Researcher – Exoplanets

I work with a small team, collecting data from various telescope runs, and attempting to update the ephemeris and discover a new Transit Timing Variable Exoplanet orbiting a star system. In addition, I'm working on python exoplanet software and auditing current software as well as improving it.

B4KTR4CE

I developed an disease agnostic AI system which emulates network biology for disease datasets by algorithmically dissecting binary classifiers on that disease and searching for motifs to help understand how disease are caused.

OPTIX

I developed an ML algorithm to describe the world to the blind, through innovative use of surround sound.

UNIVERS

I am working to categorize the entire GAIA database into a 3D searchable model of the galaxy, to attempt to find issues in current astronomical representations.

LUNA

I am developing a Laser based communication system to alleviate network difficulties and broadcast low latency internet across long distances.

Education

4.45 GPA ^{Rank} (5/570)

1550 SAT 2021

1470 PSAT 2019

5/5 *AP Chemistry*
AP Biology

AP Calculus
AP European History

AP Human Geography

Honors

MIT Think Scholars Semifinalist 2022

1st award worldwide NASA Space Settlement Contest, of 14,000 applicants 2020

Top 30 Nationwide placement United States Astronomy Olympiad First Exam 2021

AIME Qualifier 2022

R.E.D. Award Best Computer Science Project of the San Diego Science Fair 2021

Top 30 Computer Science Project California Statewide Science Fair 2021

Commended by Congressman, Congressional App Challenge Winner District 52 2022

Northrup Grumman HIP Selected, Top 8 countywide. 2022

California Statewide Science Olympiad 2nd place x2, 3rd place x1 2021

Ayush Nayak

Experience and Projects

Researcher, UCSD Supercomputer Center

One of two sophomores selected out of 50+, I worked on discovering new correlations between HCV and HBV, and it's effect on inducing cancer, by leveraging big data and using Machine Learning models.

Software Developer – UCSD TritonCubed Satellite Team

I work with university students and alumni to design and program a current proposed CubeSat satellite mission. I have participated in high-altitude balloon launches and other radio projects.

B4KTR4CE

I developed an disease agnostic AI system which emulates network biology for disease datasets by algorithmically dissecting binary classifiers on that disease and searching for motifs to help understand how disease are caused.

OPTIX

I developed an ML algorithm to describe the world to the blind, through innovative use of surround sound.

UNIVERS

I am working to categorize the entire GAIA database into a 3D searchable model of the galaxy, to attempt to find issues in current astronomical representations.

Education

4.45 GPA ^{Rank} (5/570)

1550 SAT 2021

1470 PSAT 2019

5/5 *AP Chemistry*
AP Biology

AP Calculus
AP European History

AP Human Geography

Honors

1st award worldwide NASA Space Settlement Contest 2020

Speaker at the 110th anniversary of the AAVSO 2021

Top 30 nationwide placement United States Astronomy Olympiad First Exam 2021

R.E.D. Award Best Computer Science Project of the San Diego Science Fair 2021

Top 30 Computer Science Project California Statewide Science Fair 2021

CyberPatriot National Semifinals Qualifier 2022

Commended by Congressman, Congressional App Challenge Winner 2022

Northrup Grumman HIP Selected, Top 8 countywide. 2022

California Statewide Science Olympiad 2nd place x2, 3rd place x1 2021