

Vivaan Singhvi

 github.com/vivaansinghvi07  vivaansinghvi07.github.io  singhvi.vivaan@gmail.com

EDUCATION

Farragut High School

Knoxville, Tennessee

May 2024

GPA: 4.72/4.0

RELEVANT INFORMATION

Courses: AP Comparative Government (5), AP Human Geography (5), AP World History (4), AP Government (5), AP Biology(5) AP Seminar (4), AP Language (4), AP United States History (4), AP Statistics (5), AP Calculus AB/BC (5), AP Research (4), AP Physics 1 (5), AP Chemistry (5), AP Computer Science A (Self-Studied - 5), AP German, AP Macroeconomics, AP Physics C: Mechanics, DE English 1020, DE Intro to Computer Science, DE Intro to Music

Awards: AP Capstone Diploma, 2x AP Scholar with Distinction, AP Scholar

EXPERIENCE

Oak Ridge National Laboratory Internship | Database Administration

June 2023 - July 2023

- Worked 40 hours a week developing experience in database administration and operation using PostgreSQL.
- Developed crucial workplace skills for the first time.
- Attended dozens of talks and workshops to expose myself to all kinds of professions.

National Youth Leadership Forum | Medicine and Healthcare Camp

June 2021

- Spent 9 days at an intensive medical camp, in which I participated in activities all day long, such as learning how to suture, how to draw blood, and how to use a tourniquet.
- Watched many presentations on innovations in healthcare (like a surgical robot), careers in healthcare, and various other topics pertaining to medicine.

COMMUNITY SERVICE — ABOUT 140 HOURS

Second Harvest Food Bank | Product Recovery Volunteer

2021 – Present

Worked about 80 hours packaging foods that would be delivered to pantries all over East Tennessee. Examples include bagging cereal and coffee, preparing boxes of assorted foods, and more.

National Honors Society | Member, Volunteer

2021 – 2023

Worked for about 40 hours total in on-campus projects like school beautification and trash cleanup, and in out-of-campus projects like Halloween parades and Christmas festivals.

CLUBS

Anatomy Club | Member, Volunteer, Competitor

2023 – 2024

Assisted with the preparation of activities for the club and with presentations at club meetings.

Mu Alpha Theta | Member, Volunteer, Competitor

2021 – 2024

Competed in several math competitions such as Rocket City Math League, TMTA, and MAO, volunteered for Mini Mu, a math competition at my school for 6th and 7th graders, and tutored about 15 hours.

Science Club | Member, Competitor

2020 – 2024

Attended weekly meetings featuring presentations about science and competed in events such as Science Olympiad.

Participated in various activities like solving CodeForces problems, listening to talks about computer science, and more.

Competed in fast-paced tests, twice state-level and once internationally. Attended various immersive workshops and volunteered for the club..

AWARDS

HOSA International Leadership Conference: General Chemistry | 1st place 11th grade

Won first place in the National Geographic Learning Academic Testing Center General Chemistry test, competing against students from all over the world.

HOSA State Leadership Conference: Medical Math | 2nd place 11th grade

Won second place in the Medical Math event, competing against students from all over Tennessee.

TMTA: Statistics Test | 1st place 11th grade

Achieved a perfect score on the Tennessee Math Teachers Association Statistics exam.

TN Regional Science Olympiad: Flight | 1st place 11th grade

Won first place in the Flight event for the East Tennessee Regional Science Olympiad.

TN Regional Science Olympiad: Chemistry Lab | 2nd place 11th grade

Won second place in the Chemistry Lab event for the East Tennessee Regional Science Olympiad.

TN Regional Science Olympiad: Detector Build | 3rd place 11th grade

Won third place in the Detector Build event for the East Tennessee Regional Science Olympiad.

HOSA Upper East Tennessee Regionals: Medical Math | 1st place 11th grade

Won first place in the Medical Math event in my region.

HOSA State Leadership Conference: Dental Science | 5th place 10th grade

Won fifth place in the Dental Science event, competing against students from all over Tennessee.

HOSA Upper East Tennessee Regionals: Dental Science | 1st place 10th grade

Won first place in the Dental Science event in my region.

USA Biology Olympiad | Certificate of Merit 10th grade

Awarded after taking the 50-question test online.

PROGRAMMING SKILLS

Languages: Python, JavaScript/TypeScript, HTML/CSS, PostgreSQL, Java, Shell, C/C++

Libraries: OpenCV, Scikit-Learn, React, NumPy, Pandas

Tools: Git/GitHub, Unix, Windows Subsystem for Linux, VS Code, Vim

MAJOR PROGRAMMING PROJECTS / ACTIVITIES

SMC Data Challenge | *Python, OpenCV, Scikit-Learn, Shell*

July 2023 – August 2023

- Worked for dozens of hours on an extensive solution for problem 1 of the Smoky Mountains Computing Sciences Data Challenge 2023: Machine Learning Approaches to High-Throughput Phenotyping.
- Developed expertise in computer vision processes using the OpenCV library and in simple machine learning programs with Scikit-Learn, and strengthened expertise in Python.
- Used machine learning, optical character recognition, and image segmentation models to complete tasks such as label reading, leaf morphology classification, and data analyses.
- Wrote a solution paper accepted as conference proceedings and a research poster presented at the conference.
- Gave a 5-minute lightning talk about the research.

- Created my personal website, leaning on an interactive user interface to allow the important information about me to be presented in the best way.
- Learned how to use React, a powerful and convenient JavaScript/TypeScript framework, which I plan on using in future web development projects.
- Improved upon feedback from friends and family to even further improve the user experience.
- **Dozens of other projects that are not reflected here are shown on the website.**

MandelPlot | *JavaScript, HTML/CSS*

April 2023

- Created a beautiful visualizer for the Mandelbrot Set, a fascinating set of points generated from repeating a simple function, supporting zooms quickly up to 100,000,000,000 times.
- Developed skills using asynchronous and synchronous operations to optimize performance.
- Got significant familiarity with JavaScript and how to code websites, such as manipulating event listeners and optimizing the user experience.

CodeForces Problems | *Python, Java, C/C++*

January 2023 – Present

- Solved hundreds of problems on the online competitive programming website CodeForces.
- Achieved a personal highest problem rating of 2200, from an 800-3500 scale.

Soccer Database | *Python, PostgreSQL*

February 2023 – April 2023

- Developed the structure for a simple database storing information about most aspects of soccer (leagues, teams, players, awards, matches, etc.)
- Learned how to effectively use PostgreSQL to manipulate a database to add, modify, or interpret data.
- Learned how to use Python in conjunction with a PostgreSQL database in order to use both simultaneously.

AI Text Detector | *Python, Scikit-Learn*

March 2023

- Created a machine learning model to detect if essays were written by a human or an AI.
- Developed important fundamental skills in programming with machine learning algorithms, such as model selection, accuracy testing, data pre-processing, and more.
- Created a dataset containing thousands of AI-generated essays for other people to use in their own projects.