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Vivaan Singhvi

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Education

University of Michigan | Ann Arbor, MI — Auguest 2024 – May 2028
- Computer Science Major in the School of Literature, Science, and the Arts
- Member of the Michigan Research and Discovery Scholars

Farragut High School | Knoxville, TN — August 2020 – May 2024
- GPA: 4.0 Unweighted, 4.75 Weighted
- Officer of Computer Science Club, ACT Prep Club, and Anatomy Club
- Member of National Honors Society, Mu Alpha Theta, and Science Club

Experience

Adversarial Image Detection Internship | Oak Ridge National Laboratory — June 2024 – July 2024
- Developed a deep understanding of neural networks and the AI framework PyTorch.
- Built a solid foundation in adversarial artificial intelligence, learning about several attacks and defenses.
- Developed a robust system to detect adversarial images with near-perfect accuracy.
- Created a complex 2000-line code-base in Python to allow fast and convenient use of the detector.
- Presented work in front of about 30 people in a 5-minute lightning talk format.

Database Administration Internship | Oak Ridge National Laboratory — June 2023 – July 2023
- Attended dozens of professional talks and workshops in various fields.
- Administered a large PostgreSQL database with hundreds of tables and over 5 petabytes of data.
- Wrote several SQL and Python scripts to interface with the database.
- Presented work in a 2-hour poster symposium with dozens of other interns.

Select Awards

SMC Data Challenge | Best Paper Award — August 2023
Awarded for the best solution paper at the Smoky Mountains Computational Sciences and Engineering Conference Data Challenge against several other high-school / undergraduate student teams.

HOSA International Leadership Conference: General Chemistry | 1st place — July 2023
Won first place in the National Geographic Learning Academic Testing Center General Chemistry test, competing against hundreds of students internationally.

Skills

Soft Skills: Research, Problem-Solving, Public Speaking, Professional Communication, Collaboration
Languages: English (Fluent), Hindi (Verbal), German (Beginner)
Programming Languages: Python, C, JavaScript/TypeScript, HTML/CSS, SQL, Java, Shell, C++
Libraries: PyTorch, OpenCV, Scikit-Learn, React, NumPy, Pandas, Tensorflow
Tools: Git/GitHub, MacOS, Unix Shell, WSL, Neovim, VS Code, Vim, PostgreSQL

Publications

Singhvi, V., Lunga, L., Nidhi, P., Keum, C., & Prakash, V. (2023). High-Throughput Phenotyping using Computer Vision and Machine Learning. *Smoky Mountains Computational Sciences and Engineering Conference.* https://doi.org/10.17605/osf.io/r6djq