**Nihal (CJ) Shah**

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**Education**

Computer Science and Math Double Major at Penn State University | *2023 – 2026*

Thomas Jefferson High School for Science and Technology (TJHSST) | *2019 – 2023*

**Courses**

* APCS: Data Structures
* Artificial Intelligence 1 and 2
* Computer Vision 1 and 2
* Research Statistics
* AP Statistics
* Computational Statistics
* Computer Systems Lab
* Mobile App Development
* Web App Development
* Geosystems
* AP Calculus BC
* Calculus of Multiple Variables
* Chemistry (Biological)

**Projects**

* **SizeMeUp**: A computer-vision-based approach to predicting clothing sizes from a single photo to minimize return costs for online retailers. *(Aug 2022 - Jun 2023)*
* **Soundtrackify**: Creating network graphs that display a user’s Spotify playlists using the Spotify API (<www.soundtrackify.cjshah.org>) *(Jan 2023 – Present)*
* **TJMUN Site**: Designed and Maintained the website of the TJ Model United Nations Club (<activities.tjhsst.edu/mun/>) *(Aug 2021 – Jun 2022)*
* **TJ iNite Site**: Designed the front-end and backend of a ticket-distribution site using Node.js, Express, and MySQL to manage over 3,000 queries in a three-minute span *(Jan 2023 – Mar 2023)*

**Skills**

* Machine Learning (ML)
* Computer Vision
* MySQL
* MongoDB
* Python
* Java
* R
* C++
* React
* Node.js
* Django
* Feature Classification
* AWS
* Sagemaker
* EC2
* Natural Language Processing
* transformers
* NumPy
* scikit-learn
* OpenCV
* Pandas
* Selenium
* PyTorch
* Keras
* Tensorflow

**Experience**

***The Brite Group – Herndon, VA | Data Science Intern*** *(Jun 2022 – Aug 2022)*

* Utilized transformers along with Google BERT to train an ensemble learning model to improve sentiment analysis through Entity Recognition and Relationship Classification
* Created for use in contracts with the **US Department of Defense** and **US Department of Education**.
* Trained and tested on a dataset of five million tweets pertaining to the Ukraine-Russia war with code optimized for intense processing.

***Spraxa Solutions – Mclean VA | Computer Vision Intern*** *(Aug 2021 – Feb 2022)*

* Designed an instance-segmentation-based shelf detector for vending machine restock analysis, utilizing the Mask-RCNN pre-trained model to train a separate model for use in production.

***Pentabotix*** *(Aug 2019 – Jun 2023)*

* Programmer for VEX Robotics Team 11001x – Pentabotix (<https://pentabotix.cjshah.org/>)
* State Amaze Award Champion, #1 in State Qualifications, State Skills Champion, 2-time VEX Worlds Representative
* Programmed robot automation programs in C++ using Purdue University’s PROS API

***Libra*** *(Jan 2021 – Feb 2021)*

* Worked on the creation of Libra, a machine-learning library created to simplify training through simple one liners.
* Designed backend data management through SQL for ease in data loading for training and testing.