

Aditya Behrani

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Background

I am currently a Senior at TJHSST. I have a passion for science and technology, and I am interested in Machine Learning, Artificial Intelligence, and Web Development. I am planning on pursuing a bachelor's degree in Computer Science at Purdue University.

Education

Thomas Jefferson High School of Science and Technology (TJHSST), Alexandria, VA.

Programming Skills

Java, Python, HTML5, CSS3, JavaScript, Bootstrap4, jQuery, Node.js, MongoDB, Git

Relevant Coursework

Artificial Intelligence

We learned AI techniques in a variety of contexts with an emphasis on generalizing search algorithms. We are learning about topics such as natural language processing, optimizing algorithms, and machine learning. The programming language we are using is Python.

AP Computer Science A+ Data Structures

We learned about sorting algorithms (such as quicksort, heap, selection, insertion) and data structures (such as arrays, linked lists, maps, and graphs) in an object-oriented environment. The programming language we used was Java.

Analog Electronics

We learned the basics of analog electronics with an emphasis on how to build and design circuits. We also designed and prototyped a communication system for our project in this class

Online class - The complete 2020 web development Bootcamp - by Udemy.com

I learned how to use multiple tools for web development. Developed test websites front-end and back-end using technologies such as Node.js, JQuery, and MongoDB.

Foundations of Computer Science

We learned object-oriented programming concepts and basic algorithms such as sorting, recursion, and data structures such as arrays. The programming language we used was Java.

Research and Class Projects

Artificial Intelligence class

Worked with advanced search algorithms such as A*, Minimax, and AlphaBeta. I worked on projects such as a slider puzzle solver, sudoku solver, American style crossword puzzle generator, and a program that can play Othello (Similar to a chess AI). By working on these projects I learned several important skills such as code debugging, optimization, and profiling.

AP Computer Science A+ Data Structures

I used a back-propagation algorithm to solve the infamous N-Queens problem, of which the goal is to place 8 queens on an 8x8 chess board so that no two queens can attack each other.

Analog Electronics

My team and I built a crude telephone system using the multiplexing technique. The system was made entirely out of discrete analog components and could handle multiple speakers at once.

Neuroscience Research Lab

I am using different neural networks to analyze EEG and fMRI data from Parkinson's disease patients to predict if a person has Parkinson's. Diagnosing Parkinson's is challenging, and there is no standard test, so by creating a system that can help predict if a patient has the disease, that person can get the treatment they need earlier.

Internships

Summer 2020

I worked with StaqAI on a project which focused on delivering a product that would allow consumers to use AI to trade stocks. I was the Lead Front-end Developer and led nine interns.

Intern at Project Middle Ground (PMO). PMO is a non-profit organization focused on improving Asian American representation in politics. I worked on website improvements and continue to help with updates/maintenance.

Volunteer and Extracurricular Activities

Volunteer at Prince William Hospital, Manassas, VA

Participated in TJHSST International iNite cultural festival

High School Wrestling Team

Bot Ball Robotics Team Club Coordinator

Bioinformatics Club

Model United Nations Debate Club

Honors/Achievements

Russian Olympiad 2019 at George Mason University – National Silver Medal Winner

Russian National Essay Writing Contest - National Bronze Medal Winner

AP Scholar with maximum score in three AP classes