

CHRISTOPHER ARRAYA

✉ cjarrraya22@gmail.com
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Education

Thomas Jefferson High
School for Science and
Technology 2018 to
Current

Concentration: Computer
Science

Relevant Coursework

Post-AP Computer Vision 2020
Grade: A

Post-AP Artificial Intelligence 2020
Grade: A

Data Structures 2019

AP Computer Science A 2019
AP Score: 5

Foundations of Computer
Science 2018

Skills

PROGRAMMING LANGUAGES

Python
C++
Java
JavaScript

FRAMEWORKS AND TOOLS

Django
Ubuntu
Node.js
Flask
PostgreSQL
React

Work Experience

Codefy

Advanced Python Director

Oct. 2020 to Dec. 2020

- Course director of the Advanced Python class
- Curriculum primarily focused on advanced uses for various data structures
- Created a curriculum, quizzes, and a final project revolving around the use of Python libraries

GreenLight Services

Head Web Developer

Aug. 2020 to Current

- Primary responsibilities include design, backend, and frontend of the website
- Developed backend in Django using SQLite
- Developed frontend in NodeJS and React

Projects

Restoring Lost Data from Lossy Compression Using Machine Learning

Nov. 2020 to Current

- A research project exploring the idea of restoring lost data from a discrete cosine transform (DCT) on an image
- Utilizes algorithms such as the DCT algorithm and a basic neural network
- Uses statistics to estimate the original luminance of altered pixels after compression

NewViewsNews

Aug. 2020

- A hackathon project that gives users a way to view articles and political arguments that are opposite to their beliefs so that more people can escape their echo chambers
- The web app (frontend and backend) rests on a Django framework with a PostgreSQL database
- Features include account creation and login, a liking system, RSS feeds from new sources, article tagging for relevance, and more

Replacing Lead-Acid Batteries with Solar Cells in Amphibian Habitat Water Testing

Sept. 2018 to Mar.
2019

- A research project assessing the viability of environmentally-friendly solar cells as a replacement for lead acid batteries in powering water quality field technology
- Utilized an Arduino microcontroller for the construction of a water quality testing equipment
- Included a 72-hour experiment period, with data recorded and generated automatically to an Excel spreadsheet

Awards

VEX Robotics World Championship Innovate Award

Apr. 2019

- Won the Innovate Award in the "Turning Point" challenge at the VEX Robotics World Championship
- The team with the most specific, unique engineering element that demonstrates "outside the box" thinking

VEX Robotics World Championship Skills 3rd Place

Apr. 2018

- 3rd Place in the "In the Zone" Skills Challenge at the VEX Robotics World Championship
- The team with the 3rd highest combined programming and driving points

VEX Robotics World Championship Think Award

Apr. 2018

- Won the Think Award in the "In the Zone" challenge at the VEX Robotics World Championship
- The team with the most impressive and effective autonomous programming

Activities

AFA CyberPatriot - Windows Server Expert

Sept. 2019 to Current

- The nation's largest cyber defense competition that puts high school and middle school students in charge of securing virtual networks
- Placed in Platinum Tier and top 200 teams in the nation

PC (re) Builders - Officer

Sept. 2018 to Current

- A club at TJHSST dedicated to fixing and rebuilding old or broken computers and donating them to schools in need of laptops/computers in Fairfax County
- Lectured about PC hardware and software topics including computer components, component circuitry, and operating systems

VEX Robotics - Programmer

Sept. 2017 to Current

- A competitive international robotics program
- Part of team 80708X Exobytes, a private team based in Montclair, Virginia
- Won over 30 awards from competitions ranging from the local level to an international level