

# VIJAY SHANMUGAM

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## EXPERIENCE

### Lead Communication Systems Developer

**blair3sat**

📅 September 2019 – Present    📍 Rockville, Maryland

- Currently working to implement the CCSDS communications protocol to link our cubesat with AWS Ground Station. Also appointed as Secretary on the board of blair3sat Inc.
- Previously directed simulations for the radio frequency team and worked to raise money from sponsors to fund our satellite development.
- Created ionospheric models using Python and Matlab. Used time driven modeling methods to simulate interactions between ionosonde soundings and our RF instrument.

### Data Science Intern

**LendingPoint**

📅 June 2021 – August 2021    📍 Remote

- Used data science to optimize conversions on sales funnel for eBay working capital loans.
- Created SQL queries to perform user level analytics with data from Salesforce, Mouseflow, DOMO, Google Analytics, Plaid, and others.
- Forecasted revenue for new loan repayment methods using Plaid data.

## PROJECTS

### Influencer Marketplace

**AffMark**

📅 October 2020 – January 2021

- Created a web app with Next.js and Supabase (PostgreSQL) to connect social media influencers with brands for sponsorship opportunities.
- Utilized Pytorch to develop a deep learning model to match brands and influencers based on metrics from social media accounts and brand profiles.
- Developed an influencer facing cross-platform mobile app with React Native.
- Completed Y Combinator build sprint 2021.

### Crop Growth Prediction

**Machine Learning & Data Science**

📅 October 2018 – March 2019

- Utilized Tensorflow to create a Machine Learning model that predicted year over year crop growth based on geospatial and climate data.
- Interfaced with Google Earth Engine to compile and sanitize datasets.
- Displayed color coded prediction of yearly growth for each crop type composited on a map using geoplotlib.

## COURSEWORK

- Analysis I (Calc BC)
- Analysis II (Multivar & Diff Eq.)
- Physics (Mechanics)
- Optics
- Chemistry
- Introductory Physical Chemistry
- Earth & Space Sciences
- Biology
- Algorithms and Data Structures
- Analysis of Algorithms
- Modeling and Simulation
- Computer Graphics

## EDUCATION

### Math, Science & Comp Sci Magnet

**Montgomery Blair High School**

📅 September 2019 – June 2023

## STRENGTHS & SKILLS

Mobile Development    Flight Software  
Web Development    Machine Learning  
Mathematical Modelling    DevOps

Tensorflow    Pytorch    Numpy  
React Native    MongoDB    Node.js  
PostgreSQL    React.js    MERN Stack

## LANGUAGES

Python ●●●●●

Javascript ●●●●●

Java ●●●●●

C ●●●●●

R ●●●●●

C++ ●●●●●

Rust ●●●●●

Matlab ●●●●●

## EXTRA-CURRICULAR

### Computer Team

**Montgomery Blair High School**

📅 September 2019 – Present

### Math Team

**Montgomery Blair High School**

📅 September 2019 – Present

### Science Bowl

**Takoma Park Middle School**

📅 December 2019 – March 2019