

Anish Sundaram

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Education

University of Michigan, College of Engineering, Ann Arbor MI

August 2020 - December 2024

B.S.E Computer Science with Statistics Minor GPA: 3.43/4.0

Honors/Awards: Engineering Honors Program, Dean's Honor List, University Honors, ASDRP Leadership Award

Activities: Michigan Data Science Team, Society of Asian Scientists and Engineers, Michigan Archery Club, MASA

Experience

Cisco Systems, Milpitas CA

July 2019- August 2019

Technical Marketing Engineer Intern

- Implemented software patches for the Cisco IOS XR system using Python and automated development using Bash scripts
- Developed Python application based around BGP Flowspec Protocol that increases compatibility of routers with security devices
- Applied understanding of networking fundamentals such as the OSI model, TCP/IP, IPv6, and routing protocols

Aspiring Scholars Directed Research Program (ASDRP), Fremont CA

May 2019 - August 2019

Lead Student Researcher/Lead Author

- Analyzed the more than 1.5 million object NASA/CALTECH Exoplanet Archive using a combination of SQL and R
- Designed a supervised classification algorithm using the NumPy and Pandas libraries, using Matplotlib for visualization
- Published the full manuscript in *ASDRP Communications*, later sharing our findings with a research team at Cornell University

Activities

Software Developer, University of Michigan Center for Entrepreneurship (CFE)

January 2022 - Present

- Conduct customer discovery interviews and present the product to student organizations and departments
- Host Pitch Night Mixers to promote entrepreneurship to students and advertise the Center for Entrepreneurship through tabling
- Implement a modern job posting board for U-M students using Python and Javascript

Avionics Engineer and Business Associate, Michigan Aeronautical Science Association (MASA)

August 2021 - Present

- Developed a GoogleTest /Cmake based testing suite and firmware in C to integrate hardware with the Flight Engine Controller
- Designed and implemented a GUI allowing operators and ground team to view real-time rocket data using Python PyQt5 library
- Implemented Flask and Dash based web app allowing remote control of flight functions and displays returned data logs

Michigan Data Science Team (MDST)

August 2021 - December 2021

- Investigated whether the results of College Football games could be predicted with statistics like turnover rate and tackles
- Utilized a Linear SVC to model predictions due to the labeled nature of data and smaller size –about 100k games– of our data set
- Conducted exploratory data analysis and generated visualizations using the Pandas, Matplotlib, and scikit-learn Python Libraries

Projects

MapReduce Server (Python)

October-November 2021

- Multi-process, multi-threaded server that executes user-submitted MapReduce jobs using threading and subprocess libraries
- Uses Python socket library to send JSON-formatted information through TCP servers and heartbeat signals through UDP
- Designed around fault tolerance for mapping, grouping, and reducing stages and automated using Bash scripts

Full-stack Instagram Clone (Python, HTML, CSS, SQL, React.JS)

October 2021

- Designed with HTML/CSS and implemented using Flask and SQLite for routing and backend respectively
- Utilizes the Python Jinja2 library to create HTML templates and automate processing and made interactive using React.JS
- Production and unit testing automated using shell scripts and hosted using Amazon Web Services (AWS)

Drone Pathfinding Algorithm (C/C++)

April 2021

- Generates a Minimum-Spanning Tree of user-provided destination points and restricted zones using Prim's Algorithm
- Applies a choice of multiple heuristics for a nearly-optimal path or the exhaustive optimal path
- Implemented using Branch-and-Bound design paradigm to trim paths and optimize search time

Skills

Programming Languages: C/C++, Java, Javascript, HTML, CSS, Python, MySQL, PostgreSQL, Bash Shell

Tools: Git, Linux, Visual Studio Code, REST APIs, React, Docker, AGILE Software Development, AWS, CMake

Foreign Languages: Tamil, Spanish, German