Anish Sundaram

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Education

University of Michigan, College of Engineering, Ann Arbor MI August 2020 - December 2023

Bachelor of Science in Computer Science with Statistics Minor

GPA: 3.48/4.0

Relevant Coursework: Programming and Introductory Data Structures, Data Structures and Algorithms, Practical Data Science for Engineers, Linear Algebra, Computer Science Pragmatics, Technical Communication, Foundations of Computer Science, Web Systems

Honors/Awards: Dean's Honor List, University Honors, ASDRP Leadership Award, FIRST 2020 Regional Chairman's Award

Experience

Cisco Systems, Milpitas CA July 2019- August 2019

Technical Marketing Intern

- Contributed my technical skills towards implementing software patches for the Cisco IOS XR system
- 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 team at Cornell University similarly interested in Exoplanet habitability

Activities

Mathematics and Computer Science Tutor December 2016 - Present

- Enhanced the understanding of highschool and university students in topics such as Calculus, Linear Algebra, Java, and Python programming in a 1-1 format as well as in groups of up to 20
- Instructed students in OOP concepts such as Inheritance, Polymorphism, and Data Encapsulation
- Delivered lectures on fundamental CS principles like object lifetime, Big-O notation, optimization, and using the Command Line

Engineering Lead and Chairman's Award Speaker, FIRST Robotics Team #604 December 2019 - June 2020

- Used Java to implement computer vision code allowing the robot to shoot multiple balls into a hoop
- Designed chassis and fastenings using Autodesk and instructed new team members on how to use CAD software
- Presented to a panel of judges and was awarded the Regional Chairman's Award, qualifying team for the 2021 World Championship

Projects

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, both using Branch-and-Bound

Solar Radiation Predictive Model (Python) February-April 2021

- Uses the Scikit-learn, Pandas, and NumPy Python Libraries to generate Random Forest, K-Nearest Neighbors, and Multilayer Perceptron regression models
- Compares the accuracy of the models using mean cross validation score, MAE, and MSE to determine most effective model
- Uses Seaborn and Matplotlib Python libraries to generate visualizations and plots

Machine Learning Piazza Post Classifier (C/C++) November-December 2020

- Supervised learning algorithm (Naïve Bayes Classifier) which takes training information from a .CSV file
- Determines similarity between specific posts using log-probability score
- Implemented using custom Map, Binary Search Tree, and Iterator data structures and the C++ STL

Skills

Programming Languages: C/C++, Java, Javascript, HTML, CSS, Python, MATLAB, R, Rust, MySQL, PostgreSQL

Tools: Git, Linux, Visual Studio Code, Z Shell, Web APIs, REST API, TailwindCSS, React, Docker, Tableau

Foreign Languages: Tamil, Spanish, German