Anish Nandamuri

(734) 837-2381 | anishn@umich.edu | LinkedIn | GitHub | Portfolio | Ann Arbor, Michigan, USA

Education

University of Michigan — Ann Arbor, Michigan
College of Engineering and Ross School of Business — *Sep 2024 – May 2028*
Computer Science and Bachelor of Business Administration

Experience

MICHIGAN DATA SCIENCE TEAM — Ann Arbor, MI
ML Software Developer — *2024–Present*

- Deployed pre-trained custom Computer Vision models like Roboflow to analyze 50+ soccer matches, tracking formations/movements, ball possession, pass accuracy, shot trajectories.
- Extracted advanced metrics such as distance covered by players, heatmaps of player activity, and team shape dynamics during offensive and defensive plays throughout the soccer game.
- Designed algorithms to detect and classify key events like goals, fouls, interceptions, etc.

MICHIGAN MARS ROVER TEAM — Ann Arbor, MI
AI Software Developer - Autonomy Team — *2024–Present*

- Worked in C++ to develop autonomous movement capabilities for our team's Mars Rover.
- Implemented a CUDA-accelerated algorithm to process incoming obstacle data and determine a clear path for the rover to travel, improving its autonomous navigation capabilities by 20%.
- Collaborated with teammates to test and integrate code into complex, large-scale codebase.
- Enhancing user testing interface by implementing point-and-click functionality for 3D point cloud visualized in 2D screen space, applying linear algebra techniques to determine depth.

WAYNE STATE UNIVERSITY — Detroit, MI
ML Research Assistant — *2023–2024*

- Conducted a comparative study on Professor Liu's brif and bnsing packages' testing time, training time, inference time, and ROC AUC against packages like Scikit-Learn and XGBoost.
- Developed custom scripts to preprocess and clean large datasets and analyzed 100k+ data values testing brif (random forests) & bnsing (optimal decision tree splits) using R & Python.
- Utilized advanced visualization tools in R (ggplot2) and Python (Matplotlib, Seaborn) to present insights and model performance metrics to faculty for future package developments.

Projects

Filters and Fractals | *GitHub*

- A C project which implements a variety of image processing operations that manipulate the size, filter, brightness, contrast, saturation, and other properties of PPM images from scratch and recursive fractal generation functions to model popular fractals including Mandelbrot set, Julia set, Koch curve, Barnsley fern, and Sierpinski triangle.

Chess Bot | *GitHub*

- A C++ project in which you can play chess against an AI with a specified decision tree depth that uses alpha-beta pruning algorithm to predict the optimal move. Aside from basic moves, this mini chess engine also implements chess rules such as castling, en passant, fifty-move rule, threefold repetition, and pawn promotion.

DS&A Projects | *GitHub*

- Five Java projects that apply DS&A concepts such as discrete-event simulation using priority queues, Dijkstra's shortest path algorithm, Prim's algorithm to find the minimum spanning tree, Dinic's algorithm for maximum flow problems, and weighted job scheduling with dynamic programming to real-world problems.

Skills

Languages: C/C++, Python, HTML/JS/CSS, SQL

Technologies: MySQL, MongoDB, Git, GitHub, AWS, OpenCV, PyTorch, TensorFlow

Methodologies: Agile, Scrum, OOP, Functional Programming, DevOps, CI/CD, TDD