Smayan Ranjan

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Education

University of Michigan **Ann Arbor, MI**

Bachelors of Science and Engineering in Data Science - GPA: 3.83 *Expected May 2026*

- Coursework: Data Structures and Algorithms, Computer Organization, Web Systems, Data Mining and Statistical Learning, Applied Regression Analysis, Statistics and Artificial Intelligence, Discrete Mathematics, Computer Science Pragmatics, Linear Algebra
- Campus Involvement: Michigan Data Science Team, Michigan Hackers, Wolverine Sports Analytics

Experience

Web Development Intern **May 2024 – August 2024**

Functional Food Center *Dallas, Texas*

- Collaborated with the Functional Food Center team to design and develop the website for FFC's International Satellite Conference, set to host over 5,000 attendees from 125+ countries.
- Updated and maintained website content related to upcoming conferences, including speaker profiles, abstract submission details, and conference program schedules.
- Enhanced the secondary website for FFC's journal publication services, streamlining the management of scientific research articles in the field of Functional Foods.
- Regularly uploaded journal extensions and processed recurring article submissions to ensure timely publication.

Projects

Investing Aide | *Python, Streamlit, Yahoo Finance, Plotly, Google Gemini* **https://investing-aide.streamlit.app/**

- Developed an interactive stock dashboard using Streamlit to help users perform technical analysis and track stock performance with real-time data and AI-driven insights for SWOT Analysis using Google Gemini.
- Integrated yfinance API to fetch real-time and historical stock data for analysis, allowing users to interactively select timeframes ranging from one year to several years of price history resulting in a dynamic buy/sell rating for the stock.
- Implemented SMA and EMA for visualizing stock trends and generating buy/sell signals based on crossover patterns.
- Created interactive visualizations with Plotly, calculating key financial metrics such as Annualized Return, RAR, etc.

Bank Transaction Management System Simulator | *C++, File I/O*

- Designed and implemented a banking system to manage transactions, user authentication, and real-time balance updates, supporting over 1,000 users and 10,000 transactions.
- Built a fraud detection mechanism by validating IP addresses for each transaction, ensuring secure user sessions and preventing fraudulent activities across 500+ logged-in sessions.
- Implemented a transaction scheduler using priority queues, processing transactions up to 3 days in advance.
- Accounts are initialized from an input file with passwords, usernames, balances, and initialization time while all other activities(login/out, placing transactions, checking balance, customer history, bank revenue, etc.) are done through a filestream during the execution of the simulator.

NBA MVP Predictor | *Python, Machine Learning, Jupyter, SciKit Learn, WebScraping*

- Used a Ridge Regression Model to reveal which of the 40+ metrics correlate most to winning an MVP and used that data to predict the future MVP winner.
- Used Mean Squared Error, Average Precision, and a Backtesting function to calculate the efficiency of my model which resulted in over 70 Percent accuracy in the past 25+ years.
- Web Scraped data from the past 30+ years using Selenium chromedriver for Dynamic Data Extraction for around 16,000 players using over 40 data categories resulting in over 600,000 data points.
- Cleaned and formatted multiple csv files and merged them into a single file to use for the Machine Learning Algorithm.

Bernoulli Naive Bayes Classifier | *C++, Machine Learning, NLP*

- Automatically identifies the subject of posts from a class's discussion forum and achieved 87 Percent accuracy in label prediction, validated against a labeled test dataset, and demonstrated strong results in predictive text categorization.
- Utilized Natural Language Processing concepts such as Log-Likelihood and "Bag of Words" model to build a classifier on the tendencies of previous posts, capturing complex language patterns within the labeled training data.
- Processed and stored data from nearly 3,000 posts in a Binary Search Tree for efficient lookup and memory usage.

Technical Skills

Languages: C++, C, Python, JavaScript, TypeScript, HTML, CSS
Developer Tools: VSCode, Git/Github/Gitlab, Vite, MySQL, Jupyter, Python VENV, Selenium
Libraries/Frameworks: ReactJS, NodeJS, Tailwind CSS, Streamlit, Pandas, SciKit Learn, Plotly