Aditya Chandrikapure

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Education

Indian Institute of Technology (IIT), Kharagpur — West Bengal, India
(Bachelor of Technology - Computer Science and Engineering; GPA: 8.84/10) — *Aug. 2021 – Present*

GH Raisoni School — Nagpur, India
(Class 12, Central Board of Secondary Education (CBSE); Score: 92.4%) — *May 2019 - April 2021*

Sri Guru Harkrishan Public School — Nagpur, India
(Class 10, Central Board of Secondary Education (CBSE); Score: 95.2%) — *May 2006 - April 2019*

Projects

Nottingham Trent University | *Dr. Elmina Homapour* — April 2023 - August 2023
(Objective: Sentiment & Scientometric Analysis of Financial, Dynamic and FinTech business models)

- Used **Twitter API** to extract tweets and Analyzed around **2.9 million tweets** related to business, performing annotation using **Textblob** and **Vader** and using **LDA** for **topic modeling** to uncover discussion trends.
- Performed Sentiment Analysis on the dataset to draw inferences from the tweets to gain actionable insights into the **sentiment dynamics** surrounding **business developments** specifically for **financial business models**.
- Leveraged natural language processing techniques and conducted a comprehensive analysis of sentiment in tweets related to the industry. Used methods like **Naive Bayes**, **VADER** and **Support Vector Machine (SVM)** and achieved a remarkable **94 percent** accuracy rate in classifying **sentiments as positive, negative, or neutral**.
- Used **Twitter API** to extract tweets and clean the dataset according to the requirements of the project.
- Performed **Time Series Forecasting** using ARIMA on stock prices of **20 prominent companies** in the UK.
- Conducted **Scientometric Analysis** for 'Financial Business Model' using **VOSviewer**, **SciMAT** and **NVivo**.

Stanford University | *Prof. Pascal Geldsetzer* — May 2023 - August 2023
(Objective: Machine learning in satellite imagery and other geotagged data sources to monitor health in low and middle-income countries)

- Constructed **Health Indicator Prediction Models** by utilizing dataset generated from **DHS** for **59 Countries**.
- Used Various libraries such as **NumPy**, **pandas**, **Matplotlib** and **sckit-learn** to analyze and visualize the dataset. Reduced the feature set from 11,945 variables to the most relevant ones, resulting in a 74 percent reduction in dimensionality while maintaining high predictive performance for healthcare parameters.
- Handled the missing data using the **K-Nearest Neighbors (KNN) imputation** technique. The KNN imputer was initialized with three neighbors, and the missing values were imputed to enhance the overall dataset.
- **Ridge Regression**, **Lasso Regression**, **Support Vector Regression (SVR)**, and **Gradient Boosting models** were used to evaluate the dataset and its accuracy, thereby yielding significantly better results.
- **Mean Squared Error (MSE)** and **R-squared (R^2)** values were calculated to determine the model's performance. The model with the lowest MSE of **14.24163** was selected as the best fit for predicting the target variable.

Experience

AI/ML Intern | *Velozity Global Solutions* — October 2023 - Present
(Objective: Grape leaf disease detection using Machine learning and Deep learning Algorithms)

- Designed and developed a **Convolutional Neural Network (CNN)** using **TensorFlow** and **Keras** for classifying grape leaf diseases from images.
- Successfully achieved an impressive 92% accuracy on the test dataset, demonstrating strong model performance.
- Applied data preprocessing techniques, including data augmentation, to enhance model robustness, generalisation
- Proficiently utilized essential deep learning tools such as **TensorFlow**, **Keras**, **NumPy**, **PIL**, **pandas**, and **Matplotlib** for data manipulation, model building, and visualization
- Implemented early stopping during model training to prevent **overfitting**, ensuring the model's ability to generalize to new data
- Documented the entire project, including detailed schematics, codebase, and user manuals, for future reference and potential scalability of the project, and used **Yolo8** for precise object detection.

Research Intern | *Indian Institute of Management Calcutta* December 2022 - August 2023
(Domain: Investment experience, categorical thinking, and stock selection)

- Python was employed for data manipulation and analysis, with **pandas** serving as the primary tool for cleaning, transforming, and analyzing extensive datasets. **Seaborn** was utilized to craft informative and visually engaging data visualizations, enhancing the overall understanding and communication of key findings.
- Utilized **web scraping techniques** to gather real-time and historical financial data from various online sources.
- Developed and implemented a specialized **Queue based algorithm** for calculating stock returns, contributing to more informed and data-driven investment decisions, ultimately optimizing investment portfolio performance..
- **Probit and Tobit Regression Models** were used to analyze the investor experience and forecast future investment trends within industry classifications based on **Fama and French (1997)**.

Awards and Honours

- Selected as a Delegate by the Committee of Evaluations for the **Harvard Project for Asian and International Relations (HPAIR) 2023** based on previous experiences and merit.
- **KVPY Scholar**, Recipient of the prestigious Kishore Vaigyanik Protsahan Yojna (KVPY) Fellowship Award - 2020 under the SX Stream, securing an **All India Rank of 794(out of 50,000+ candidates)**.
- Secured an **All India Rank of 398 in JEE Advanced 2021(out of 2,00,00+ candidates)**.
- Secured **All India Rank of 2348(99.79 Percentile)** in **JEE Mains 2021(out of 10,00,000+ candidates)**.
- Secured **Rank 3** in the **Region of Nagpur City** in the **CBSE Board 2019** and was awarded the **Hitvada City Line Excellence Award**.

Positions of Responsibilty

Entreprenuership Cell, IIT Kharagpur | *GES Intern* January 2023 - August 2023
(Skills: Business Analysis · Presentations · Strategy · Leadership · Communication · Management)

- Responsible for the publicity and overall conduction of the **Global Entrepreneurship Summit (GES) 2022**.
- Conducted **15+ Nationwide online Seminars** in a systematic manner, spreading awareness of Entrepreneurship and publicising **Global Entrepreneurship Summit 2022**.
- Publicized the event in the Regions of **Maharashtra and Gujarat** and brought **150+ registrations**.
- Worked in accordance with the team to get in a footfall of **1600+ participants** all across the nation.
- Influenced heavy participation through **Social Media Marketing**. This concerted effort resulted in heightened brand visibility, increased user engagement, and a broadened reach, ultimately contributing to the achievement of our marketing objectives.

Coursework

- **Computer Science:** Programming and Data Structures (CS10003), Machine learning and Deep learning (CS60050), Algorithms 1 and 2 (CS21003), Software Engineering (CS20202)
- **Mathematics:** Linear Algebra (MA11004), Probability And Statistics (MA20205), Stochastic Processes (MA41017), Advanced Calculus (MA11003)
- **MOOCs:** Stats110 (Harvard), CS229 (Stanford), CS231n (Stanford), CS182 (UC Berkeley), CS234 (Stanford)

Technical Skills

Languages: Proficient: Python, C, C++ — Familiar: Bash, Java, Verilog, MIPS-32
Frameworks: React, Node.js, Flask, JUnit, WordPress, Material-UI, FastAPI
Libraries: Numpy, Pandas, Matplotlib, Scikit-Learn, NLTK, TensorFlow, Keras, Textblob, Selenium, OpenAI Gym
Operating Systems: Ubuntu, MacOS, Windows
Integrated Development Environments: Visual Studio Code, PyCharm, Jupyter Notebook, Matlab, Google Colab