DEBYENDU ROUTH

M.Sc. in Big Data Analytics
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Portfolio

PROJECTS

- **Stock Price Prediction:** Google Stock Price Prediction - A Regression Task
  Sep 2024 - Nov 2024
  - **Tools:** NumPy, Pandas, Matplotlib, scikit-learn
  - **EDA:** Feature Space Dimension Checking ,Nan-value Checking, Data Description, Multicollinearity Checking, Z-Score Normalization.
  - **Models:** Multiple Linear Regression , Regularized version of Linear Regression like ridge , Lasso and Elastic-Net.
  - **Optimization Algorithms:** BGD , MBGD , SGD (Through Class defining and creating object)
- **Diabetes Prediction:** Diabetes prediction - A Classification Task
  Sep 2024 - Nov 2024
  - **Tools:** NumPy, Pandas, Matplotlib,seaborn, scikit-learn
  - **EDA:** Nan-value Checking, Data Description, Class-Counts, Feature Space Dimension Checking ,Z-Score Normalization (Before PCA Projection), Visualization of data through Pie-Chart and Bar-Chart, Visualization of overlapping of the classes through PCA projected data in 2D and 3D.
  - **Models:** SVM(With different kernels) With Confusion matrix , AUC-ROC curve , Decision Tree , Random Forest(Bagging) , KNN , Voting.
- **Brain Tumor Detection:** Brain Tumor Detection Using DL Model
  Jan 2025 - May 2025
  - **Tools:** NumPy, Pandas, Matplotlib,seaborn, scikit-learn,PyTorch
  - **EDA:** Visualizing The data (Images) , Class distribution through pie-chart and bar-chart.
  - **Models:** Devoloped a Custom CNN model and evaluated with Confusion Matrix , AUC-ROC curve , Precision , recall , Support. Implemented Transfer learning , finetuning the pre-trained model ResNet18,and compared the devoloped custom model(CNN) with the pre-trained ResNet18 model.
- **Facial Emotion Detection**: Facial Emotion Detection Using CNN
  Jan 2025 - May 2025
  - **Tools:** NumPy, Pandas, Matplotlib,seaborn, scikit-learn,PyTorch
  - **EDA:** Class Counts , Class Distribution Through pic-chart and bar-chart.
  - **Model:** Developed a custom CNN model .

COURSEWORK

- ***RKMVERI(Big Data Analytics)***
  - Deep Learning
  - Natural Language Processing
  - Computer Vision
  - Artificial Intelligence
  - Time Series & Survival Analysis
  - Machine Learning
  - Probability And Statistics
  - Econometrics & Finance
  - Reinforcement Learning
- ***RKMVERI(Mathematics)***
  - ODE , PDE
  - Topology
  - Operator Theory
  - Graph theory
  - Number Theory
  - Discrete Mathematics

EDUCATION

- **Ramakrishna Mission Vivekananda Educational and Research Institute, Howrah**
  M.Sc. in Big Data Analytics
  2024 – Present (Sem-1) CGPA: 7.04
- **Ramakrishna Mission Vivekananda Educational and Research Institute, Howrah**
  M.Sc. in Mathematics
  2022 – 2024 CGPA: 9.14
- **Udaynarayanpur Madhabilata Mahavidyalaya**
  B.Sc in Mathematics
  2018 – 2021 CGPA: 7.854
- **Khalatpur High Madrasah**
  Indian School Certificate (10+2)
  2016 – 2018 Score: 83.4%
- **Udaynarayanpur Sarada Charan Institution(10)**
  2016 Score: 74.8%

ACHIEVEMENTS

- **NPTEL: Joy of Computing with Python** – Secured a position in the **Top 5%** of learners nationwide
- **GATE Qualified in Mathematics** – Qualified the Graduate Aptitude Test in Engineering (GATE) in the Mathematics stream
- **Power BI for Beginners (Udemy)** – Completed a certified course covering data visualization, dashboards, Power Query, and DAX basics
- **Python and R (Level-1), Ramakrishna Mission Vidyamandira** – 40-hour certification (Apr–Jun 2023)

TECHNICAL SKILLS

- **Programming Languages:**Python, SQL, LaTeX
- **Libraries and Frameworks:** Pytorch,OpenCV,scikit-learn,Seaborn,PySpark,NumPy,Pandas, Matplotlib
- **Tools:**Git/Github, Power BI, MS Office, MS Excel
- **Operating System:**Windows, Linux (Ubuntu)

EXPERIENCE

- **Teaching Experience**
  – Taught Python At Udaynarayanpur Madhabilata Mahavidyalaya

HOBBY

- Exploring spiritual texts , philosophical insights
- Playing cricket