Abhishek

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Education

UNITED COLLEGE OF ENGINEERING AND RESEARCH, 2021-2025

- Course: B.Tech in Computer Science
- CGPA: 7.3/10
- **Coursework:** Object Oriented Programming, Database Management System, Machine Learning, Statistics, Data Structures and Algorithm.

Projects

PUBMED LITERATURE SKIMMER – NLP, Deep Learning, Flask Link

- Working on an NLP project that classifies sentences from medical research abstracts into sections like { Background, Objective, Methods, Results, and Conclusion } .
- Used the **PubMed RCT 200k** dataset, which contains over 200,000 labelled medical abstracts.
- Applied token, character, and positional embeddings, and built a hybrid model using BiLSTM layers.
- **Achieved ~89% accuracy** in sentence classification.
- Converted the model into **web application** using **Flask** and further developed it into **Chrome Extension.**
- This **project improves accessibility** for researchers by **summarizing large abstracts** in 5 classes.

WINE QUALITY PREDICTION - Machine Learning, Data Wrangling, Eda, Pandas Profiling Link

- Built a machine learning model to classify wine quality using **physicochemical properties**.
- Performed data cleaning, conducted EDA, and performed feature selection for optimal modelling.
- **Handling Imbalanced data**: Addressed class imbalance with SMOTE and optimized performance through hyperparameter tuning.
- **Evaluated 4 machine learning models:** Logistic Regression, Naive Bayes, Decision Tree, and Random Forest using the evaluation metrics : Accuracy, Recall, Precision, F1 Score.
- **Achieved 85% accuracy** with **Random Forest Model.**
- Demonstrated the use of data science to streamline quality control in the wine industry.

FOOD VISION PROJECT - Deep Learning, Tensorflow, Keras, Food101 Dataset Link

- Developed a deep learning model for food image classification using TensorFlow and **Food101 dataset** with over 100,000+ images**.**
- **Transfer Leaning:** Taking leverage of the pretrained model like **EfficientNetB0**.
- Implemented data preprocessing techniques including resizing, normalization, and data augmentation.
- Applied **mixed precision training** to accelerate the training process, achieving up to 3x speed improvements on compatible GPUs.
- Built and fine-tuned, high-accuracy model, that **Outperforms the baseline DeepFood model.**
- **Achieved ~90% accuracy** on the Food101 dataset with just **3 Epoch of Training**.
- **Deployed the model using web app** created on Streamlit for delivering **End-to-End project**.

Technologies

- **Language** –C, Python
- **Database** – MySQL, PostgreSQL, SQL Server
- **Data Analytics** –MS Excel, Power BI, Statistical Analysis, Data Cleaning, Data Wrangling
- **Machine Leaning** - Linear, Logistic, KNN, Decision Tree, Random Forest, K-Mean Clustering, LSTM, Naïve Bayes , PCA, Handling Imbalance dataset, NLP.
- **Deep Learning** – Neural Network Building, Transfer Learning, CNN, NLP, LSTM, RNN etc.
- **Frameworks** – NumPy, Pandas, Matplotlib, Seaborn, Scikit-learn, TensorFlow, Keras, Streamlit.

Certificates

- **Data Science** by Ainwik Infotech Link **2025**
- **Machine Learning** by Softpro Link **2024**
- Introduction to **Statistics** by Standford Link **2024**
- Master **MySQL for Data Science** by UDEMY Link **2024**
- **Supervised Machine Learning**: Regression and Classification by Standford Deep learning Link **2024**
- **NumPy for Data Science** – Real Time Exercises by UDEMY Link **2024**