Bhanu Pratap Mishra

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PROFESSIONAL SUMMARY

IT Professional with 2+ Months of experience in the industry of data science and machine learning. Currently working on data augmentation through GAN's needed for the facial recognition system. Have sound mathematical knowledge and understanding of machine learning.

SKILLS AND COMPETENCIES

Technical: Machine Learning, Deep Learning, Python, Image Processing, Natural Language Processing, Decision Tree, Random Forest, SVM, TensorFlow, Keras, Pandas, NumPy, Seaborn, Matplotlib, Clustering, SQL, Linux, Amazon Sagemaker.

Certifications/ Course Work: AppliedAI Machine learning, Data-Structure with python NPTEL, NTA UGC-NET.

PROFESSIONAL EXPERIENCE

Junior AI Enginner — Unikul Solutions Pvt Ltd.   **May 2022—Present**
Projects – Face recognition based Attendance system   **Aug 2022—Present**
- Develop **Deep learning** Algorithms for **facial recognition** and **data augmentation**.
- Creating an **Rest API** to make ML model integrate with front end.
- Handling of Model **Pipeline** with Amazon **Sagemaker** on **AWS**.
- Use of **Siamese** and **YOLOv5** Network for model creation.
- Skills – Amazon Sagemaker, **Computer Vision**, Product Management.

EDUCATION

B.Sc (PCM) : june 2011 to july 2014 From Lucknow University.

MCA : june 2017 to july 2021 From IGNOU.

ACADEMIC PROJECTS

Implementing DenseNet
- Objective: Implement a **Dense-Net** model with 100 layers with less than 1 Million parameter and without **Dropout layer** on CIFR10 Dataset.
- Analysis: Perform Data augmentation with **ImageDataGenerator**.
- Models: Built DenseNet-BC 100 model where Bottleneck and compression features are used to classify the **CIFR10** Dataset images. Model contain 3 Dense Block, 2 Transition Block and one Output Block, growth rate used is 14 .
- Results: The Metric used is Accuracy, the model achieve 90.5 validation accuracy with loss function as log loss and validation loss as 0.484.
- Use-cases: The DenseNet architecture can be used in place of other state of the art architecture such as **resnet** to train **Deep CNN** models.

Text Classification with CNN
- Objective: Developed Model To classify Text Using CNN.
- Analysis: **Text Preprocessing** with regex, Chunking, Part-of-speech tagging.
- Models: Built Model which used 1D-CNN to classify text, text is converted to vector with **embeeding layer**, used prebuilt **Glove vectors** for text to vector conversion.
- Results: Metrics used is f1_score and accuracy, model achieve validation accuracy of 0.72 and validation f1_score of 0.72.
- Use-cases: The model can be trained to classify various types of texts into their respective classes.

Transfer Learning with VGG-16
- Objective: Developed Model Using VGG-16 to classify documents based on their images.
- Analysis: Use ImageDataGenerator for loading huge data into batches with **flowfromdirectory method**.
- Models: Built Model by changing the classification layer of **VGG-16** with custom layer and retuning it to fit the dataset .
- Results: Metrics used is accuracy, model achieve validation accuracy of 0.71.

Attention based Italian to English Conversion
- Objective: Implement an **Attention based** model from scratch to perform language conversion from italian to english.
- Analysis: Text Preprocessing, **Custom Model** Creation in **Keras**, Word embedding creation.
- Models: Built Attention Based Model with **Encoder, Decoder** and Attention layer with dot, general, and concatenation mechanism for conversion of italian text to english text.
- Results: **Belu Score** is used as metric, Model achieve belu-score of 0.67.
- Use-cases: This case-study can be used to learn working of Attention based models and for **text conversion**.

Microsoft Malware Detection
- Objective: Developed Model to classify Malware type with given Malware's 'text' and 'asm' files Using **XGBoost** Classifier .
- Analysis: Feature extraction, **univariate analysis**, **TSNE** for multivariate analysis, class distribution.
- Models: Built Model with XGBoost Classifier over the combined features from 'text' and 'asm' files.
- Results: **Log loss** is used as metric, Model achieve test log loss of 0.012.
- Use-cases: The model can be used to classify Malware types based on their text and asm files.