Leveraging Deep Learning : A Twitter Intent Analysis System

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Acknowledgement

This document outlines a Twitter Intent Analysis System powered by Deep Learning, coordinated by:

- ***Jeshwanth Varma MV (CSE) :*** sets up virtual machines, storage, and networking components needed to run the system using Infrastructure as Code (IaC) tools like Terraform or AWS.
- ***Kovid Patel M (Data Analyst):*** works with the project team to identify reliable sources of Twitter data involves using public APIs or web scraping techniques.

Abstract: *The proposed system ensures that the ever-increasing volume of Twitter data presents a significant challenge: understanding the underlying intent behind user tweets. This project proposes a Twitter Intent Analysis System powered by Deep Learning, aiming to automatically categorize tweets based on the user's purpose.*

Leverage domain expertise to ensure the model effectively analyzes tweets within the chosen domain. This involves incorporating knowledge specific to the context of the analyzed tweets (e.g., understanding industry jargon or brand-specific language).This project leverages Deep Learning and NLP techniques to address the challenge of understanding user intent in the vast landscape of Twitter data. The resulting system offers valuable insights for various stakeholders, fostering a deeper understanding of public opinion and online communication.

Keywords for this project could include:

1. *Rest Natural Language Processing (NLP)*
2. *Recurrent Neural Networks (RNNs)*
3. *Tokenization*
4. *Stemming/Lemmatization*
5. *Crisis Management*
6. *Trend Identification*
7. *Text Mining*

Objectives:

- *Develop a deep learning model capable of accurately classifying tweets based on user intent (e.g., positive sentiment)*
- *Utilize Natural Language Processing (NLP) techniques to extract relevant features from tweets that inform intent classification.*
- *Leverage domain expertise to ensure the model effectively analyzes tweets within the chosen domain.*

Methodology (for "TIAS"):

1. ***Data Acquisition:*** *Gather a comprehensive dataset of labeled tweets encompassing diverse topics and user intents.*

2. ***Data Preprocessing****: Clean and prepare the data by removing irrelevant information, duplicates, and applying NLP techniques (tokenization, stemming/lemmatization).*

3. ***Feature Engineering:*** *Extract informative features from the pre-processed tweets, including keywords, sentiment indicators, and n-grams.*

4. ***Model Development and Training:*** *Design and train a deep learning model (e.g., Recurrent Neural Networks) on the prepared dataset, fine-tuning hyperparameters for optimal performance.*

5. ***Evaluation and Refinement:*** *Assess the model's accuracy using metrics like precision, recall, and F1 score. Refine the model based on the evaluation results.*