E-Commerce Store Review Classification using Deep Learning Techniques with Cloud Deployment

(Problem Statement)

Through experiential learning Forsk educates, mentors train the next generation of Data Scientists and practitioners. Best way to learn is by doing. To work on **Client Project Opportunities** with Forsk acting as a **Project Guide** and **PMC** (Project Management Consultant) to make sure that everyone completes the Project in given time.

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Learners with an interest in large data handling, analytics, machine learning, Deep Learning and NLP to perform predictions and visualizations can join this project internship batch.

Internship Type		Project Internship Batch
Duration		100 days
Internship Letter		Based on your College/University requirenments But should be less than 100 days
Domain		Data Preparation, Machine Learning, Deep Learning, NLP, Python, Dash
Project Internship Mentors		Dr. Sylvester Fernandes Mr. Yogendra Singh
Client Name		A leading Gems and Jewelry Company
Project Title		E-Commerce Store Review Classification using Deep Learning Techniques with Cloud Deployment
Description		Creating a Web Based Dashboard to Gain Real Time Analysis on How Customers Feel About Client's Product Using Machine Learning, Deep Learning and NLP Techniques with Data Processing on Large Dataset
Dataset		14 GB Amazon Review Data (2018) with 32,292,099 reviews

Dataset Details		Clothing_Shoes_and_Jewelry.json.gz (3 GB) Clothing_Shoes_and_Jewelry.json (14.14 GB) balanced_reviews.csv (135 MB)
Time Requirements		1.5 hours daily

Program Features :

1. All Registered participants would receive the documents for Problem Statement, Solution Approach, Wireframe and Code Snippets.
2. Forsk mentors would play 2 Roles PMC (Project Management Consultant) and PG (Project Guide).
3. Paid users will get Part - Time Internship letter (100 days) after successful completion/submission of the Project.
4. Final Source Code and Demo Video needs to be submitted via Github link.

Project Success Criterias :

1. Code Commenting
2. Exception Handling
3. Logging
4. Variable Naming Convention
5. User Experience (UX)
6. User Interface (UI)
7. Meet Clients Expectation
8. Code Modularity

Prerequisites:

1. Basic coding fundamentals in any programming language

Client Expectation :

Since the client is in the business of Online Sale of Jewelry items through its website and also TV Channels in USA, UK and Australia. They receive multiple feedback and reviews of their products from all the channels, (Website, TV Channels etc).

The clients do not have a huge collection/ database of the reviews of their products, so there is a challenge of training the model for Sentiments Analysis.

They want us to develop a dashboard, through which they can Analyze the reviews of their products and do a sentiment Analysis of it.

Since there was a lack of enough data for training the model, we took a transfer learning approach to solve it. We took the Jewelry data from Amazon Reviews data until 2018. It was 14 GB of JSON data.

To solve the client problem we need to create multiple small sub projects:

1. Process large dataset and convert into a smaller dataset after cleaning and preprocessing the data to convert in to a balanced_reviews.csv

2. Read the balanced_reviews dataset and use the Bag of Words Model to train a model and save into a pickle file.
3. Using Pre trained models to achieve the same.
4. Create a Web Scraper to scrape the data from Flipkart/etsy to test the newly created model by saving the reviews/feedback into a database
5. Create a Dashboard using the Dash framework to integrate the picked file and predict the sentiments of the stored data from the database.

The UI must be polished (colors/fonts, easy to use)
Navigation must be easy to follow
You must include some significant functionality beyond what you are taught in internship.

Why must every student in this internship complete the project?

- Working on an AI/ML/DL project independently (apart from lab instructions).
- Exploring the end to end project development of a ML/AI/DL project.
- Applying knowledge of the process of software development to a new application.
- Having fun developing a project that interests you.
- Satisfaction in creating something useful and complex enough to be posted on the Internet.