DL 2nd

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import pandas as pd
from sklearn.model_selection import train_test_split
from sklearn.feature_extraction.text import CountVectorizer
from sklearn.metrics import accuracy_score
import tensorflow as tf
from tensorflow.keras import Sequential
from tensorflow.keras.layers import Dense

# Load the dataset from CSV
df = pd.read_csv('imdb_reviews.csv')

# Split features and target variable
X = df['review']
y = df['sentiment']

# Split data into training and testing sets
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2,
random_state=42)

# Convert text data to numerical vectors
vectorizer = CountVectorizer()
X_train_vectorized = vectorizer.fit_transform(X_train)
X_test_vectorized = vectorizer.transform(X_test)

# Build the model
model = Sequential([
  Dense(64, activation='relu', input_shape=(X_train_vectorized.shape[1],)),
  Dense(32, activation='relu'),
  Dense(1, activation='sigmoid')
])

# Compile the model
model.compile(optimizer='adam', loss='binary_crossentropy',
metrics=['accuracy'])

# Train the model
model.fit(X_train_vectorized, y_train, epochs=5, batch_size=32, verbose=1)

# Evaluate the model
y_pred = model.predict_classes(X_test_vectorized)
accuracy = accuracy_score(y_test, y_pred)
print("Accuracy:", accuracy)
```