

Python code

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# Python Code for Understanding the Role of Social Media in International Relations
# Dataset: 'df.csv'
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import pandas as pd
from sklearn.model_selection import train_test_split
from sklearn.ensemble import RandomForestClassifier
from sklearn.feature_extraction.text import TfidfVectorizer
from sklearn.metrics import classification_report, confusion_matrix
import matplotlib.pyplot as plt
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# Load dataset
df = pd.read_csv('df.csv')
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# Data Preprocessing: Vectorizing Post Content using TF-IDF
X = df['Post_Content']
y = df['Relations_Shift'] # Target: Predicted shift in relations
(Improved/Strained)
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# Train-test split
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.3,
random_state=42)
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# Vectorization using TF-IDF
vectorizer = TfidfVectorizer(max_features=1000, stop_words='english')
X_train_vec = vectorizer.fit_transform(X_train)
X_test_vec = vectorizer.transform(X_test)
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# Random Forest Classifier for Predicting Diplomatic Shifts
rf_model = RandomForestClassifier()
rf_model.fit(X_train_vec, y_train)
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# Predictions
y_pred = rf_model.predict(X_test)
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# Evaluation: Confusion Matrix and Classification Report
print("Confusion Matrix:\n", confusion_matrix(y_test, y_pred))
print("Classification Report:\n", classification_report(y_test, y_pred))
```

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# Real-Time Data: Plot Engagement Metrics Over Time
df['Timestamp'] = pd.to_datetime(df['Timestamp'])
engagement_over_time = df.groupby(df['Timestamp'].dt.hour)['Engagement'].mean()
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```
# Plot Engagement Over Time
engagement_over_time.plot(kind='line', figsize=(10, 6))
plt.title('Real-Time Engagement Metrics for International Relations')
plt.xlabel('Time (Hours)')
plt.ylabel('Average Engagement Score')
plt.show()
```