**Analyzing the Sentiment of Twitter Users Towards the Israel-Palestine Conflict**

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Our area of focus was sentiment analysis and natural language processing in the context of the Israel-Palestine conflict. The project aims to apply the machine learning concepts we’ve covered in class and apply them to a real-world, relevant topic to understand the public sentiment towards a complex and polarizing issue. Our question: What is the current sentiment of English-speaking Twitter users toward the Israel-Palestine conflict? Utilizing the Octoparse API, we scraped tweets under multiple hashtags including #IsraelPalestineConflict, #ProIsrael, #ProPalestine, etc. from October 7, 2023 (the date of the Hamas attack), to the present. Our final dataset includes 1,360 rows with information on polarity, date posted, user, tweet content, likes, and views. Our two-fold approach involved sentiment analysis comparing the Roberta and Vader polarity models, followed by machine learning models like Decision Trees, Naive Bayes, and Support Vector Machines to categorize tweets into groups like pro-Israel, pro-Palestine, or neutral. From there, we analyzed the models’ performances through metrics like accuracy, precision, and recall on our testing data. The Roberta model fared better against the Vader model overall in scoring sentiment; most tweets contained mostly negative sentiment. From our machine learning models, testing accuracies between decision trees, SVM, and Naive Bayes performed with an accuracy of ~53%. Insights include majority of the tweets’ polarity leaning toward Pro-Palestine. Ethical considerations include ensuring privacy in data scraping and responsible presentation of results, given the topic's sensitivity. In conclusion, this project analyzes Twitter sentiment on the Israel-Palestine conflict. Future directions include refining models and expanding the dataset.