Southwest Airlines Review Analyzer: Web App for Sentiment Analysis

MS-CISBA Capstone (CIDM 6395-70)

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Project Overview

- The Southwest Review Analyzer is a web application used for sentiment analysis of reviews from the airline on Trustpilot.
- The app includes user-friendly features like the ability to input the desired number of reviews and see insightful visualizations on the data.
- Includes aspects from three of the foundational topics in the MS-CISBA program, those being Systems Development, Data Analytics, and Data Mining and Management.

What the Project Solves

- Large airlines like Southwest need active and persistent sentiment analysis for tracking customer satisfaction and identifying service pain points in real time.
- The analyzer visualizes the results of the sentiment analysis, which can give Southwest Airlines actionable insights into the data.
- Helps customer experience teams prioritize feedback that requires immediate attention or follow-up.
- Provides a scalable framework for analyzing reviews efficiently without manual review.

Integration with MS-CISBA Curriculum

- Systems Development: The review analyzer was built using Python on the Flask framework. It includes additional languages like HTML and CSS for improved functionality and styling.
- Data Analytics: I utilized matplotlib to generate five visualizations based on the reviews that are shown to the user. Additionally, the table of reviews along with the sentiment tied to each one can be filtered or sorted, giving the user more control over what they wish to see.
- Data Mining and Management: The project scrapes reviews from Southwest's profile on TrustPilot and saves them as raw data. It then cleans the data and uses TextBlob to apply NLP to the reviews to complete sentiment analysis.

Future for the Southwest Review Analyzer

- The current iteration of the project strictly scrapes the text from reviews on TrustPilot. With usage of their API however, much more insightful data could be gathered, and new visualizations would be possible.
- TextBlob is sometimes inaccurate and unpredictable as an NLP system. Switching to a much more advanced NLP system would be ideal to accurately show the sentiment for reviews of Southwest flyers.
- This project is lacking in Networking and Cybersecurity. Addition of this would not only be possible but would be useful for the project in its entirety. Having a user login with a history of the sentiment analyses they have done would be a nice feature to have.

Conclusion

- The Southwest Airlines Review Analyzer is a useful tool for data science and data analytics teams within the company to streamline the process of sentiment analysis.
- The project includes aspects from three of the four core areas in the MS-CISBA program, with the missing fourth being planned.
- This project prototype is fully capable of evolution into a comprehensive sentiment analysis tool for Southwest Airlines.