DERIVING MAINTENANCE OF ACCOMMODATIONS THROUGH AUTOMATED TEXT-BASED CUSTOMER REVIEW ANALYSIS

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ABSTRACT

In today's business environment, most organizations have already recognized that customer feedback reviews play a significant role in determining the company's future actions. The hospitality and tourist industry is a well-known area where the utilization of these consumer reviews has become critical. Even while most accommodations encourage their customers to express their views regarding their services, these reviews are still evaluated manually by them. This manual procedure is time consuming and mistake prone, and the quality of the manual analysis is determined by the amount of experience of the person evaluating the reviews.

This research focuses on the design and development of "Reviewer," a tool-based support system that analyzes text-based customer reviews and then showcase the maintenance concerns raised in the reviews, eliminating the need to manually examine and analyze the customer reviews. In order to extract crucial insights, the tool is equipped with data preprocessing, sentiment analysis technologies, and a fully trained deep learning model. The tool combines several data preprocessing approaches, such as feature extraction with one hot encoding and stop word removal using spacy. Text based customer reviews are classified as positive and negative reviews. Finally, as the outcome, tool provides the capability to identify maintenance concerns from these reviews based on several categories and the ability to mark them as resolved or not.

Using sentiment analysis techniques after data preprocessing and the trained deep learning model, an accuracy of 96% was achieved, and all of the testing metrics relevant for the problem were included to ensure that this proposed system helps to fulfill the need of the accommodation management by performing the operations well. This could save the time of the management and meanwhile helps to save without losing their customers which helps to increase their additional sales.

Keywords: – Machine Learning, Classification, Natural Language Processing, Text-based Customer Review Analysis, Sentiment Analysis, Deep Learning

Subject Descriptors: –

Computing Methodologies → Artificial Intelligence → Natural Language Processing → Information Extraction