

Compulsory Task 2

I have recently got interested in trading and investing and was wondering if NLP is used in the field of finance. I have come across sentiment analysis and decided to use it as an example for Compulsory Task 2.

Sentiment analysis is a powerful application of natural language processing (NLP) in the field of finance. It involves the use of machine learning algorithms and linguistic techniques to analyze and interpret the sentiment or emotion expressed in textual data, such as news articles, social media posts, customer reviews, and other sources of information.

The primary goal of sentiment analysis in finance is to gauge the overall sentiment surrounding specific companies, financial instruments, or market events. By analyzing large volumes of text data, financial analysts and investors can gain valuable insights into public opinion, market sentiment, and potential market trends (Li, 2014, pp. 14-23).

The technology behind sentiment analysis works by employing a combination of techniques, including text preprocessing, feature extraction, and sentiment classification. Text preprocessing involves cleaning and normalizing the text data by removing noise, punctuation, stop words, and other irrelevant elements. Feature extraction involves transforming the text into a numerical representation that can be used as input for machine learning models. This step often includes techniques such as bag-of-words, word embeddings, or document-term matrix.

The sentiment classification phase is where machine learning algorithms come into play. These algorithms are trained on labeled datasets, where human annotators assign sentiment labels (such as positive, negative, or neutral) to the text samples. The machine learning models learn from these labeled examples and develop the ability to classify new, unlabeled texts into sentiment categories.

Once the sentiment analysis model is trained, it can be applied to real-world data. The model takes in the text as input and assigns a sentiment score or label to it, indicating whether the sentiment expressed is positive, negative, or neutral. This information can be aggregated and analyzed to understand the overall sentiment towards a particular company, stock, or market event.

Several companies and research institutions have developed sentiment analysis technologies for finance. One prominent example is Bloomberg, a leading provider of financial data and analytics. Bloomberg's proprietary sentiment analysis technology, known as Bloomberg Market Sentiment (BMS), analyzes news articles, social media feeds, and other textual sources to measure the sentiment and relevance of the information. BMS provides investors and traders

with real-time sentiment indicators, helping them make more informed decisions and stay updated on market sentiment.

Work Cited

Li, Xiaodong. "News impact on stock price return via sentiment analysis."

Knowledge-Based Systems, vol. 69, 2014, pp. 14-23.