

# GLA UNIVERSITY



A

Mini Project

Based On Machine Learning

On

Sentimental Analysis

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## **SENTIMENTAL ANALYSIS**

Sentiment analysis, also referred to as opinion mining, is an approach to natural language processing (NLP) that identifies the emotional tone behind a body of text. This is a popular way for organizations to determine and categorize opinions about a product, service, or idea. It involves the use of data mining, machine learning (ML) and artificial intelligence (AI) to mine text for sentiment and subjective information.

Sentiment analysis systems help organizations gather insights from unorganized and unstructured text that comes from online sources such as emails, blog posts, support tickets, web chats, social media channels, forums and comments. Algorithms replace manual data processing by implementing rule-based, automatic or hybrid methods. Rule-based systems perform sentiment analysis based on predefined, lexicon-based rules while automatic systems learn from data with machine learning techniques. A hybrid sentiment analysis combines both approaches.

In addition to identifying sentiment, opinion mining can extract the polarity (or the amount of positivity and negativity), subject and opinion holder within the text. Furthermore, sentiment analysis can be applied to varying scopes such as document, paragraph, sentence and sub-sentence levels.

Vendors that offer sentiment analysis platforms or SaaS products include Brandwatch, Hootsuite, Lexalytics, NetBase, Sprout Social, Sysomos and Zoho. Businesses that use these tools can review customer feedback more regularly and proactively respond to changes of opinion within the market.

## About the Project

**Sentiment analysis** (also known as **opinion mining** or **emotion AI**) is the use of natural language processing, text analysis, computational linguistics, and biometrics to systematically identify, extract, quantify, and study affective states and subjective information. Sentiment analysis is widely applied to voice of the customer materials such as reviews and survey responses, online and social media, and healthcare materials for applications that range from marketing to customer service to clinical medicine. With the rise of deep language models, such as RoBERTa, also more difficult data domains can be analyzed, e.g., news texts where authors typically express their opinion/sentiment less explicitly.

## MOTIVATION

There are many researchers trying to surpass the latest best results and achieve the state-of-the-art in English sentiment analysis by using handcrafted features. This approach may result into overfitting the data. However, sentiment analysis in Czech has not yet been thoroughly targeted by the research community. Czech as a representative of a inflective language is an ideal environment for the study of various aspects of sentiment analysis (overview or breadth study of sentiment analysis if you will) for inflectional languages. It is challenging because of its very flexible word order and many different word forms. We conceive this study to deal with several aspects of sentiment analysis. The breadth of this study can lead to more general view and better understanding of sentiment analysis. We can reveal and overcome unexpected obstacles, create necessary evaluation datasets and even come up with new creative solutions to sentiment analysis tasks.

## **HARDWARE REQUIREMENT**

**I3 Processor**

**4GB RAM**

**6GB Hard Disk Space**

## **SOFTWARE REQUIREMENT**

**Windows7**

**Python 3.7**

**Python Modules**

## **TECNOLOGY USED**

**MACHINE LEARNING**