**ABSTRACT (250 words)**

**%--- Info about the paper with conclusion**

**INTRODUCTION (500 words)**

**Sentiment analysis is a technique which allows computers to obtain sentiment (attitudes, feelings, emotions) from human-created text. It is occasionally referred to as “opinion mining”, but some sources differentiate between the two terms [1].**

**Sentiment analysis is a part of natural language processing (NLP) field. NLP aims to allow computers to understand – obtain meaning from human text/speech, or produce content related to human language and written word.**

**Very often a purely objective examination of human language by a machine is not enough to dissect the true context behind it. Similar sentences can have different, even opposite, meanings depending on the way they are phrased (e.g., sarcasm). On top of that, sometimes, the emotions expressed (e.g., disappointment, satisfaction) are more valuable than the content itself and thus, sentiment analysis is not just a helpful tool for the synthesis of human-language in general but has many application in various fields.**

**E-commerce and online shopping have become an undisputable part of modern global market – according to Statista [2], retail internet sales have accounted for almost five trillion USD (almost 4 trillion GBP) and are projected to gain the share of 25% of total global retail sales by 2025. The weight of online markets has been even more amplified by the Covid-19 pandemic. Users often decide between products based on their reviews or comments/posts on social media or online articles [3], [4]. Through sentiment analysis techniques, this data can be examined and used for market research [3], [4]. Understanding of opinions about products and their features can greatly assist retailers in business decisions.**

**Opinions voiced on social media sites can be used with sentiment analysis in other cases too. Since the internet has become a major platform for political candidates, parties or movements, whose supporters or opponents are willing to openly share their thoughts through social media, sentiment analysis can help to identify potential voters or platforms or serve as an analysis tool for polls and predictions [3].**

**While used seldomly in such cases at this time, sentiment analysis can also prove applicable in mental health diagnosis or mental health studying. Wang et al [10] have developed a sentiment analysis model that attempts to detect signs of depression of social media users in China.**

**Due to its breadth of applications and their significance, sentiment analysis is one of the most prominent research areas in machine learning and computer science. Feldman [3] counts over 700 articles that have been written on the topic and that “hundreds of start-ups are developing sentiment analysis solutions”.**

**Sentiment analysis is regarded as a classification problem. Three major classification levels are usually categorized in sentiment analysis: document-level, sentence-level, and aspect-level [1]. Many different sentiment analysis algorithms and enhancements were proposed in the last couple of years [1]. These are divided into machine-learning or lexicon-based methods or their combinations [1]. Different approaches and their applications are further described below in section “Literature Review”.**

**LITERATURE REVIEW (750 words)**

**Further SA description**

**Machine learning vs lexicon approach**

**Which algs are used and for which tasks**

**Alg description? – ml methods (confusion matrix)**

**Which data was used**

**-----------------------------------------------------------------------------------------------**

**AI EXPERIMENTS**

**What is matlab**

**How was it used**

**Ml methods (confusion matrix)**

**Algs decriptions**

**RESULT ANALYSIS**

**Idk wtf**

**CONCLUSION AND FUTURE WORK**

**REFERENCES**

**[1] Medhat W. *et al.*, “Sentiment analysis algorithms and applications: A survey,” *Ain Shams Engineering Journal*, vol. 5, no. 4, pp. 1093-1113, Dec. 2014.**

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**[3] Feldman R., “Techniques and Applications for Sentiment Analysis”, *Communications of the ACM*, vol. 56, no. 4, pp. 82-89, Apr. 2013.**

**[4] Popescu Ana-M. and Etzioni O., “Extracting Product Features and Opinions from Reviews,” in Natural Language Processing and Text Mining. London, The United Kingdom of Great Britain and Northern Ireland: Springer, 2007, ch. 2, pp. 9-28.**

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**[10] Wang X. *et al*, “**A Depression Detection Model Based on Sentiment Analysis in Micro-blog Social Network,” presented at Pacific-Asia Conference on Knowledge Discovery and Data Mining, Heidelberg, Berlin: Springer, 2013, pp. 201-213.

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