## ANALYSIS OF THE TEXT STREAM FOR THE LEVEL OF HATE SPEECH CONTENT

## Oliinyk V., Podorozhniak A.

## National Technical University «Kharkiv Polytechnic Institute», Kharkiv

In the modern world the problem of monitoring incoming text flow in social networks and messengers turned out to be very sharp [1].

Analysis of the latest researchers and publications shows us that the best solutions for hate speech recognitions are the following: message content is being analyzed and based on results the text is recognized as hate speech or not; sender is classified as a hater without looking to the text of the message [2].

There are also two most relevant ways of recognizing the haters: on linguistic basis and based on user's behavior.

In our project we decided to combine most popular algorithms of text analysis: bayes naive classifier, support vector machine and convolutional neural network. The majority algorithm works in a such way: we analyze the results of all used methods and based on that we calculate the end decision using F1-score metric (we also try to use other popular metrics too) [3, 4].

You will see the work results of every algorithm and of the majority one on our project.

After carefully examining the results, it is clear that the proposed comprehensive majority algorithm gives the highest accuracy, that is when we analyze the data by all proposed above algorithms at the same time.

It is planned in the future to analyze a larger number algorithms and their combinations, to use slightly different methods calculation of the final result and to use the so-called coefficients to of each of the applied algorithms.

## **References:**

- 1. Liubchenko N., Podorozhniak A., Oliinyk V. Research Application of the Spam Filtering and Spammer Detection Algorithms on Social Media. CEUR Workshop Proceedings, 2022, vol. 3171, pp. 116-126. [Електронний ресурс]. Available at: http://ceur-ws.org/Vol-3171/paper13.pdf.
- 2. Liu B., Blasch E., Chen Y., Shen D., Chen G. Scalable sentiment classification for Big Data analysis using Naïve Bayes Classifier. Proceedings of the IEEE International Conference on Big Data, USA, 2013, pp. 99-104. DOI: 10.1109/BigData.2013.6691740.
- 3. Liubchenko N., Podorozhniak A., Oliinyk V. Research of antispam bot algorithms for social networks. CEUR Workshop Proceedings, 2021, vol. 2870, pp. 822–831. [Електронний ресурс]. Available at: http://ceur-ws.org/Vol-2870/paper61.pdf.
- 4. Parzhin Y., Kosenko V., Podorozhniak A., Malyeyeva O., Timofeyev V. Detector neural network vs connectionist ANNs. Neurocomputing, 2020, vol. 414, pp. 191-203. DOI: 10.1016/j.neucom.2020.07.025.