D. Lohvyn, L. Bozhukha, Yu. Honcharova

TOPICAL ISSUES IN NATURAL LANGUAGE PROCESSING

The purpose of this paper is to provide a brief review of current issues related to Natural Language Processing. In the digital era NLPtechnologies occupy a unique niche, trying to bridge the gap between human language and machine understanding [2, 3]. At first glance, it may seem that machines understand human speech very easily, but behind this picture lies a carefully selected combination of algorithms, data and computation that is not without errors.

In-depth explorations of NLP reveal many barriers and challenges that prevent seamless machine-to-human communication. This constant flux requires NLP systems to regularly adapt to ensure their relevance and effectiveness in real-time scenarios. In general, there are 7 main challenges in modelling and designing NLP models.

1. Idiomatic and figurative language, polysemy. In addition to the literal interpretation, languages contain phrases whose meaning does not follow directly from the words that make them up. To understand the essence of idioms, metaphorsor similes, an NLP system has to go beyond parsing and dive into the semantics of the information. In other cases, the used words may have different meanings depending on the context, adding to the complexity of building an NLP model.

2. Lack of annotated data. Although the digital age offers an abundance of textual data, the lack of annotated datasets, especially for dialects or regional languages, limits the universal applicability of many NLP solutions.

3. Ethical standards. Biased (or discriminatory) training data can cause NLP systems to produce skewed results, inadvertently perpetuating social, gender, or other views. This requires rigorous objectivity checks and methods to eliminate data bias.

4. Security and Reliability. As NLP models improve, they become vulnerable to manipulation and hostile attacks. Ensuring their resilience to intentional false inputs is a primary task to achieve reliable results [1].

5. Computing costs. High-performance NLP tasks require significant computing power, which raises questions about model scalability and the environmental impact of these models, given the resources required to keep the system running.

6. Interpretability of the model. The "black box" nature of many NLP models hinders model transparency, making it difficult to identify the causes of

certain model results [1]. Healthcare, medicine, and law are among the fields where this problem needs detailed study and solution [2].

7. Multimodal integration. The synthesis of textual data with visual or auditory signals is a new and rapidly developing area of NLP. Creating systems that consistently process and generate content in different modalities remains a topic issue for developers.

Although NLP technologies continue to cross boundaries and evolve, it is important to address these issues for their holistic evolution and realization of their full potential in various applications.Further research should more thoroughly investigate the abovementioned issues.

REFERENCES

1. The Black Box Problem in LLMs: Challenges and Emerging Solutions. [Електронний ресурс]. – 2023. – Режим доступу до ресурсу:https://www.unite.ai/the-black-box-problem-in-llms-challenges-and-emerging-solutions/
2. Natural Language Processing (NLP). Use cases for Business Optimization. – [Електронний ресурс]. – 2023. – Режим доступу до ресурсу: https://mobidev.biz/blog/natural-language-processing-nlp-use-cases-business
3. What is Natural Language Processing (NLP)? [Електронний ресурс]. – 2024. – Режим доступу до ресурсу:https://www.ibm.com/topics/natural-language-processing

Y. Marynchuk, O. Hurko

THE ISSUE OF TECHNOLOGY AS A WAY OF TRANSCENDING FREEDOM IN THE LATE M. HEIDEGGER'S PHILOSOPHY

The problem of technology belongs to the late period of M. Heidegger's work. It raises the question of the human thinking possibility – how is it carried out in the post-industrial era? Technique is considered both as the essence of thinking and as its burden. In our study we interpret technology as a phenomenon of technical progress of the 20th century. In analysis of the state of the epoch, M. Heidegger points up the issues connected with the readiness of human thinking in particular: to understand the essence of things; to know what they are made of and for what purpose; to appreciate how to deal with them. Moreover, it is important to emphasize that the technology that is included in the education of a person and which is itself a human, even ancient, way of being educated and interacting with the world.