

References

1. *Родригес Кастильо, Сесар Даниель*. Брендинг с влиятельными лицами: возможность для продвижения брендов / Сесар Даниель Родригес Кастильо // Молодой ученый. – 2023. – № 16 (463). – С. 139–143. – URL: <https://moluch.ru/archive/463/101689/> (дата обращения: 06.10.2024).
2. Использование влиятельных личностей в smm продвижении // СММ-Агентство. – Москва, 2022. – URL: <https://smm-agentstvo.ru/blog/ispolzovanie-vliiatelnykh-licnostei-v-smm-prodvizhenii/> (дата обращения: 07.10.2024).
3. *Liu, M.* Determining the Role of Influencers' Marketing Initiatives on Fast Fashion Industry / M. Liu // Frontiers in Psychology. – 2022. – Vol. 13. – URL: <https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2022.940649/full> (date of access: 09.10.2024).

A. Kuzmin

А.Н. Кузьмин

Институт бизнеса БГУ (Минск)

Научный руководитель А.М. Туровец

METHOD OF MINIMISING ERRORS OF GENERATIVE LANGUAGE MODELS OF NEURAL NETWORKS IN SOLVING LOGISTIC PROBLEMS

Способ минимизации ошибок языковых генеративных моделей нейронных сетей при решении логистических задач

Digitalisation has spread widely to all the sectors of the economy and, in particular, to all functional areas of logistics as a science. The models of neural networks became important elements of overall process of implementation of innovations.

There are many different models of neural networks, but the most popular at the moment are generative language models (GLM). Specialists teach such models on the text data massive. While the model learns, parameters form and the probabilities (weights) of that parameters assign. After that users can interact with the GLM usually via the chat bots. ChatGPT 3.5 was the first opened generative language model, which was released to the public in 2022 (the latest version as on November 2024 is ChatGPT-4o. mini).

The business subjects, in particular logistic companies, declared their willingness to implement those models in business processes and functional areas. Generative language models in logistics can be used in all the areas: transportation, warehousing, distribution processes, inventory management etc. The main purposes of it lies in the usage as the assistant instrument in the demand forecasting, routing, document search, choosing the concept of the production at the theory of decision-making process and many other tasks.

Since 2018 the developer, OpenAI, conducted a lot of experiments with the first versions of neural networks built on that architecture, such as GPT 1.0, GPT 2.0 etc. But

the scale and accuracy of the initial versions were at a low level, and the size of the text basis was bigger than the size of the model.

That fact was positive and negative at the same time, because when ChatGPT 3.5 was released, the quantity of the parameters became bigger and different kinds of errors appeared. The main aim of the research is to develop the algorithm of minimising them. In this article we will classify these errors as general ε_g , random ε_r and filter ε_f . General and filter errors are not decreasing the accuracy too much, but the other type, random errors can influence on the output data user gets on the plane of constructing fictional reality, and that fact isn't always obvious, that's why we should endeavour to minimise the percentage of all errors.

One of the solutions to the problem is to develop a correct query to the model from the user side. There're 3 main principles of correct request: accuracy of input data, limitations and the form of output data. The first component of that formula implying that the user should always type in the model all the aspects of the request: thus, the model will maximise its accuracy in the dialogue. The second principal refers to the limitations: user should always limit the flow of the parameter's probabilities, typing what the model shouldn't output. The third constituent – the form of the data: mostly the output data generates in simple text, but the user can point on, for example, table form.

If the principles of correct request are followed, error frequency will decrease. That mainly concerns the most dangerous type – random errors, but the other types will also go down. It is expected that the proportion of all types of errors occurring in an interaction session will tend to zero with the development of this innovative solution and other minimisation techniques.

Thus, the basic algorithm for minimising various kinds of errors of generative language models (GLM), including those in solving logistic problems of various kinds, has been considered in the article. As a result of the research, there are 3 main principles of the correct request to the GLM: accuracy of input data, limitations and the form of output data. The proportion of errors in output information will tend to zero with the development of models and new minimisation techniques.

V. Kulich

В.С. Кулич

БГЭУ (Минск)

Научный руководитель Е.Ю. Белозерова

DIGITAL TRANSFORMATION OF SOCIETY: MODERN ACHIEVEMENTS AND FUTURE PROSPECTS

Цифровая трансформация общества: достижения современности и перспективы будущего

Digital transformation is a process of profound changes in society caused by the introduction of digital technologies in all spheres of life. It is radically changing the