**REVIEW**

of the diploma project done by students

**Student 1, Student 2, Student 3**

majoring in Big Data Analysis

Diploma project topic

**Implementing machine learning models for epidemy propagation forecasting**

The diploma project is devoted to one of the most topical topics of our time. In order to successfully resist the spread of infection, it is necessary to analyze the dynamics of the development of the incidence, calculate the burden on healthcare and make realistic forecasts.

The diploma project consists of an introduction, three chapters, a conclusion, a list of references and applications.

The introduction substantiates the relevance of the topic, assesses the current state of the problem being solved, defines goals and objectives, as well as the object and methods of research.

In the first chapter, the analysis of various literary sources is carried out, the factors influencing the spread of the epidemic are identified, the analysis of machine learning models used to predict the spread of the epidemic is carried out, the analysis of the input data is carried out and the problem statement is formulated.

The second chapter describes the ARIMA, LSTM and SEIR models in detail, presents their architecture and mathematical model.

In the third chapter, the described models are tested, errors in forecasting are determined, and the results of the three models are compared.

In the final part of the work, the results of the study of the topic are summed up, conclusions and suggestions are formulated.

The work is illustrated with graphic abilities, comparable features, tables, graphs and diagrams.

The content and volume of the diploma project fully correspond to the task and profile of the specialty, characterize sufficient theoretical and practical training of performers.

Student **Student 1** conducted research on the use of the ARIMA time series forecasting model to analyze open data on the spread of coronovirus infection using the example of India. The student conducted a comparative analysis of the forecasting results of the three considered models. In the process of working on the diploma project, the student showed diligence, analytical and creative abilities, independence in making design decisions, showed good knowledge of professional disciplines. The student completed all assigned tasks on time and in full.

Student **Student 2** conducted research on predicting the spread of epidemics using the LSTM model. She analyzed and described methods for measuring forecast errors in absolute and relative terms. In the process of completing the diploma project, the student showed the ability to combine theoretical knowledge and their practical application, showed high ability to solve the tasks, showed independence in the analysis and evaluation of the collected data.

Student **Student 3** used the SEIR model to predict the spread of epidemics. She described the mathematical model in detail, tested it, calculated the errors. In the process of analyzing and preparing the diploma project, the student showed the ability to analyze and systematize the collected information, showed diligence, responsibility, and the ability to work in a team. The student completed the task in full.

**DIPLOMA PROJECT ASSESSMENT:**

Diploma project is recommended for admission to protection and students are graded as follows:

**Student 1** is given a grade \_\_\_\_ ( \_\_\_\_)

**Student 2** is given a grade \_\_\_\_ ( \_\_\_\_)

**Student 3** is given a grade \_\_\_\_ ( \_\_\_\_)

Diploma Project Supervisor \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_/\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_/

(signature) (name)

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