ABSTRACT

Explanatory note size – 54 pages, contains 24 illustrations, 24 tables, 4 applications, 14 references.

Actuality of theme. Image classification is an important research problem in computer vision applications, such as facial expression classification, satellite image classification, and the use of machine learning (ML) in medicine is not a new concept, especially considering the background of the Covid19 pandemic and the increased relevance for the diagnosis of this disease.

The aim of the study. The main target is to select a dataset for model creation and develop a method for creating a machine learning model based on the analysis of the conducted research.

The object of research: diagnosis of the disease Covid19 on tomograms.

The subject of research: methods and algorithms for building a neural model for reading tomograms.

To achieve this goal, the following tasks were formulated:

– search and analyze the data set to create a model for identifying Covid19;

– analyze existing solutions for creating a machine learning model;

– analyze methods of increasing the effectiveness of the results of the developed model;

– develop a method for creating a machine learning model;

– based on the results of the model, conduct an analysis and improve the accuracy of diagnosis.

The scientific novelty of the results of the master's dissertation is in the fact that the own algorithm for image processing and normalization has been developed, as well as the method of creating a neural network model has been perfected.

The practical value of the obtained results is that the developed neural network model can be used by medical institutions to diagnose the disease of COVID-19, thereby reducing the burden on doctors and giving more time to treat patients.

Relationship with working with scientific programs, plans, topics. The work was performed at the Department of Informatics and Software Engineering of the National Technical University of Ukraine "Ihor Sikorsky Kyiv Polytechnic Institute".

Approbation. The scientific provisions of the dissertation were approved at the third All-Ukrainian scientific and practical conference of young scientists and students "SOFTWARE ENGINEERING AND ADVANCED INFORMATION TECHNOLOGIES" (SoftTech-2022 autumn) - Kyiv.

Publications. The scientific provisions of the dissertation are published in:

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