ABSTRACT

Explanatory note size – 103 pages, contains 39 illustrations, 44 tables, 5 applications, 32 references.

Topicality. The paper considers the problem of building a psychological portrait of a person based on his or her activity in social networks. In today's world, people spend a huge amount of time on social media and their activity is strongly correlated with psychological characteristics. This information can be useful both for personal use and in professions where understanding a person's psychological characteristics is important. As a result, there is a need to implement a system that can analyse posts on social media for certain behavioural patterns or traits.

The aim of the study. The main target is to automate the creation of a psychological portrait of a person based on social media activity.

The object of research: software for creating a psychological portrait of a person based on social media activity.

The subject of research: methods, approaches and tools for building a psychological portrait of a person based on their activity in social networks

To achieve this goal, the **following tasks** were formulated:

–   to analyze current approaches to determining a psychological portrait of a person based on social media activity;

–   to analyze off-the-shelf software products that allow to build a psychological portrait based on data from social networks;

–   to develop a neural network model for determining a person's portrait based on his/her posts on social media;

–   to verify the correctness of the developed model;

–   to design architecture and implement software for determining a psychological portrait.

The scientific novelty of the results of the master's dissertation is that the multitask finetuning approach was used for this task for the first time. The use of this approach allowed us to improve the accuracy of the model compared to the approach when training is performed on each of the tasks separately.

The practical value of the obtained results is that a neural network for identifying psychological traits of a person in a text was designed and implemented. In addition, a distributed system was implemented to process posts from social networks and determine personality trait scores based on the Big Five and MBTI models. This system can be used by specialists in psychology, HR, SMM, or forensics.

Relationship with working with scientific programs, plans, topics. Work was performed at the Department of Informatics and Software Engineering of the National Technical University of Ukraine «Kyiv Polytechnic Institute. Igor Sikorsky».

Approbation. The scientific provisions of the dissertation were tested at the VII International Scientific and Practical Conference of Young Scientists and Students "Software Engineering and Advanced Information Technologies" (SoftTech-2024) – Kyiv.

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