

## ABSTRACT

Explanatory note size – 105 pages, contains 13 illustrations, 36 tables, 4 applications, 25 references.

**Topicality.** The paper considers the problem of developing an software for Speech-Based Health Condition Assessment, shows the main features of existing solutions to the problem, their advantages and disadvantages. The need to improve the method of identifying the physical condition of a person using artificial intelligence and the creation of software that will facilitate this is identified.

**The aim of the study.** The main goal is to increase the efficiency of solving the problem of primary determination of the physical condition of a person using speech parameters.

**The object of research:** Architecture and processes of software for determining the physical state of a person.

**The subject of research:** Methods for detecting the physical condition of a person based on speech parameters.

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

- to consider the relevance of using software to determine the physical condition of a person;
- analyze existing software for determining the human condition;
- create your own software;
- compare your software for determining the physical condition of a person with other, similar applications.

**The scientific novelty** of the results of the master's thesis:

- it is proposed to determine the physical condition of a person by analyzing speech parameters based on the primary voice print and entering symptoms into a chatbot for further classification using artificial intelligence;
- it is proposed to use GPT-3 to determine the physical condition of a person using speech parameters. For large amounts of data, the use of fine-tuning is proposed.

**The practical value** of the results obtained is that an application has been developed that will reduce the burden on family doctors and will allow the user to

receive an initial analysis of his condition by sending a voice message to the bot, which will be compared with the previously provided voice print to determine changes in speech parameters and by entering symptoms in the dialogue.

**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 Third All-Ukrainian Scientific and Practical Conference of Young Scientists and Students "Software Engineering and Advanced Information Technologies" (SoftTech-2022 Autumn) - Kyiv.

**Publications.** Scientific provisions of the dissertation are published in: Susiekov Y.R. Software for Speech-Based Health Condition Assessment / Y.R. Susiekov // Proceedings of the Third All-Ukrainian Scientific and Practical Conference of Young Scientists and Students "Software Engineering and Advanced Information Technologies" (SoftTech-2022 autumn) - Kyiv: NTUU "KPI", November 23-25, 2022.

**Keywords:** GPT-3, ARTIFICIAL INTELLIGENCE, CLASSIFICATION, SPEECH PARAMETER PROCESSING, HEALTH CONDITION ASSESSMENT.

## СПИСОК ВИКОРИСТАНИХ ДЖЕРЕЛ

1) Helsi.me and Doc.ua: how Ukraine's two largest medical digital platforms earn money [Електронний ресурс]. – 2021. – Режим доступу до ресурсу: <https://www.epravda.com.ua/rus/publications/2021/03/2/671524/>.

2) The System Carebits telemedicine platform and Sigmafon portable fetal electrocardiography units allow for remote fetal diagnostics. [Електронний ресурс]. – 2022. – Режим доступу до ресурсу: <https://thepharma.media/news/30956-v-ukrayini-vikoristovuyut-telemedicni-texnologiyi-dlya-analizu-pokaznikiv-zdorovya-vagitnix-30112022>.

3) Evaluation of Phonexia automatic speaker recognition software under conditions reflecting those of a real forensic voice comparison case. [Електронний ресурс]. – 2019. – Режим доступу до ресурсу: <https://www.sciencedirect.com/science/article/abs/pii/S0167639318304333>.

4) Phonexia launches deep neural network-powered voice biometric engine. [Електронний ресурс]. – 2018. – Режим доступу до ресурсу: <https://www.biometricupdate.com/201803/phonexia-launches-deep-neural-network-powered-voice-biometric-engine>.

5) The Top 10 CRM Tools for Small Businesses in 2022 [Електронний ресурс] – 2022. – Режим доступу до ресурсу: [https://www.semrush.com/blog/best-crm-for-small-business/?kw=&cmp=WW\\_SRCH\\_DSA\\_Blog\\_EN&label=dsa\\_pagefeed&Network=g&Device=c&utm\\_content=631554833964&kwid=dsa-1875638615022&cmpid=18352133756&agpid=142552556546&BU=Core&extid=60162684699&adpos=&gclid=Cj0KCQiA4aacBhCUARIsAI55maHrMZDpiaaMeTX5mt28XtcivOk08rL -mcGL5KPFnrBG 8Jdqq0grgaAuEEEALw wcB](https://www.semrush.com/blog/best-crm-for-small-business/?kw=&cmp=WW_SRCH_DSA_Blog_EN&label=dsa_pagefeed&Network=g&Device=c&utm_content=631554833964&kwid=dsa-1875638615022&cmpid=18352133756&agpid=142552556546&BU=Core&extid=60162684699&adpos=&gclid=Cj0KCQiA4aacBhCUARIsAI55maHrMZDpiaaMeTX5mt28XtcivOk08rL -mcGL5KPFnrBG 8Jdqq0grgaAuEEEALw wcB).

6) A Forensic Psychological Study for Detection of Deception in Financial Fraud Calls on Layered Voice Analysis (LVATm). Khevna Maniar, Sarthak Rathod, Akhlesh Kumar, Dr. S. K. Jain [Електронний ресурс] – 2022. – Режим доступу до ресурсу: