

## ABSTRACT

Master's thesis: 140 pp., 48 fig., 31 tab., 1 application, 32 sources.

The purpose of this work is to create a cost-effective system for voice biometrics. The main purpose of the work was to build a general scheme of such a system as well as determine its components and optimal parameters.

The object of study of this master's work is the recognition of human voice by computer. The subject of the study is voice biometrics, ie voice recognition of the individual.

Designed system contain three basic modules. The first module is the MFCCs, the algorithm that give off individual voiceprint. The second module is a classifier that has to learn the voiceprints obtained with the first module. The third, and last, module is the verifier, which for the second time (after the classifier) verifies the correct identification of the person.

A separate system was developed for parameter selection.

Based on the selected optimal parameters, console application of voice biometrics in the Python programming language and a separate java mobile application were created. The accuracy of the console application on a dataset of 80 samples of 40 different individuals was 93%. During authentication, when 6 seconds of speech were been processing, the duration of the console application working was 2 seconds.

The first stage of the development of the startup project was completed, namely, the marketing analysis of the startup project was performed.

VOICE BIOMETRY, PERSONAL AUTHENTICATION, LIMITED COMPUTING RESOURCES, FAST BIOMETRY, MFCC, CLASSIFIERS, PYTHON