ABSTRACT

Diploma: 96 p., 7 tables, 34 img., 2 appendixes, and 27 references.

HEART RATE VARIABILITY, RANDOM FOREST, CLASSIFICATION, MACHINE LEARNING, SUPERVISED LEARNING, STRESS.

Object of this work is stress. The purpose of this work is the development of architecture and a description of the principles of the intellectual system for determining the signs of stress based on biometric signals of the person, namely, the heart rate, as well as the practical implementation of the system. Different methods of machine learning are considered in the work, an overview of existing systems of stress determination is conducted

Results of work:

- proposed architecture of the system for determining the signs of stress based on the variability of the heart rate;
- such system is implemented.

Novelty of work:

- justified use of the RandomForest method when constructing a classifier;
- a set of features is selected that is sufficient for more accurate determination of the person's stress;

The results of this work are recommended when it is necessary to assess the level of stress on the basis of the work of the heart. With further research in this area, it is advisable to expand the training database with data tested by specialists in the field of stress, as well as to investigate the effects of other biometric signals.