

ABSTRACT

Bachelor's thesis: 82 p., 17 fig., 7 tabl., 2 appendixes, 28 sources.

Object of study - spectral images of grain crops.

Subject of research - the use of neural networks for analysis of the state of plant.

Purpose of the study - to develop a system of identification of plant state.

Research methods - the use of neural networks for forecasting chemical composition of plants, spectral analysis methods.

Urgency - wide applicability in the agricultural sector to enhance productivity.

Results - the analysis of modern methods of investigation of plants, the analysis of various algorithms and architectures of neural networks to solve this problem, the system, which is based on predicted data concludes condition of the plant.

The novelty of the work:

- the analysis of using different architectures and algorithms of neural networks for solving the problem of predicting the chemical composition of plants;
- developed and implemented a system of identification of plant state.

The further development of the research subject - writing a module for processing spectral images, expanding the training set.

**MACHINE LEARNING, NEURAL NETWORKS, REMOTE SENSING,
SPECTRAL ANALYSIS**