

ABSTRACT

Topic: Scalable objects detection module.

Thesis contains 69 p., 10 tabl., 23 fig., 2 ext., 22 references.

NEURAL NETWORK, OBJECT DETECTION, SUPERVISED LEARNING, TEACHER LEARNING, TENSORFLOW, TECHNOLOGY, MACHINE LEARNING, COMPUTER VISION.

Object of research – Artificial neural networks for scalable objects recognition in images.

Subject of research – Module for recognition scalable objects in images.

Purpose of research – Architecture development and description of the principles of the module for the classification of scalable objects, practical implementation of the system.

Relevance – Ensure maximum accuracy of object recognition in images.

The results of the work are:

- optimal neural network architecture is chosen;
- proposed image preprocessing method that improves precision and recall of neural network;
- developed web-service.

Novelty of work: A comparative analysis of relevant neural network architectures was conducted, the work of the Faster R-CNN architecture trained on different data bases was analyzed, a way to improve the accuracy and response of the network was proposed.