

R-CNN plant diseases detector using triplet loss and Siamese neural networks

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The main problem addressed in this work is the creation of an R-CNN plant diseases detector. We have great results with the classification task. Our current architecture based on the Siamese neural network with triplet loss function has an accuracy of more than 97%. We have a nice self-collected database with more than 1500 images – pdd.jinr.ru. Newer the less, we would like to spread the abilities of our platform with a detection function. We are limited in the training dataset so we could not use modern detectors architectures like YOLO. In the current research, we are examining the effectiveness of the R-CNN with Siamese neural networks for vegetation disease detection. One of the main reasons for the development of this detector was the fact that gardeners often send photos showing a disease that quickly spreads to neighboring leaves, for example, Gray rot, in such cases, it is necessary to accurately indicate the infected leaves for their further treatment. Infected leaves will be framed and have inscriptions corresponding to the name of the disease

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