IN4320 Machine Learning

Exercises: Multiple Instance Learning

Author:
Milan Niestijl, 4311728

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1. Naive MIL classifier

We first implement a naive MIL classifier. To reduce computational costs, the images are first downscaled with a scaling factor of 0.2. The images are next segmented using the Mean Shift algorithm using a width parameter of 30. To verify that the apples are correctly separated from the background, the obtained segments are plotted for a couple of images in figure **TODO**.

- 786 bags, 1 instance per bag and 3 features per instance. Check ff of deze shit klopt!
A scatterplot of the instances can be seen in figure **TODO**.

1.g: Use MIL classifier twice: once to see if it is an apple, and once to see if it is a banana. Implement it using a combiner such that one positive classifies the entire bag as positive. (positive being either banana or apple). If the bag is both classified a banana and a apple, THEN use majority voting. (or there might be both a banana and a apple in the bag?).

Bibliography

Zhu, Xiaojin, & Ghagramani, Zoubin. 2002. Learning from Labeled and Unlabeled Data with Label Propagation. *CMU-CALD-02-107*.