DD2427: Lab Project

Group: Student 1, Student 2

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Introduction

Summary of the lab:

- implementation of Viola & Jones face detector
- test my face detector on images

Main parts of lab

Visual features Implementation of efficient visual features

Boosting Implement *boosting* to build a strong classifier from the visual features

Check performance Assess performance of learned face detector

Apply face detector Apply the learned detector to *real* images

Visual Features Extracted

Mention

- the type of features
- how these features can be computed quickly and efficiently via the integral image.

Visual Features $\Rightarrow$ Weak Detectors

Learning the weak detectors

Boosting: Algorithm Overview

Detecting Faces

Details about multi-scale searching. Mention that in this framework searching for large scales is not time consuming.

Results: Learned strong classifier

Details about training

- Number of training images (positive and negative)
- Number of features used

Picture of learned classifier. Picture of 1st n features chosen. Picture of ROC curve.

Results: applied to pictures of classmates

Details about

- how many scales searched over
- setting of the threshold

Pictures of detections.

Our added value to the lab implementation

Describe if you:

- came up with a different way of computing the threshold of the weak detector
- had a clever way of speeding up the training/detection time..
- computed a cascaded classifier and your findings.
- .....

Our final ideas/thoughts

Given the time:

- Which improvement would you like to implement
- Which issue would you like to investigate