ADD VISION TO YOUR PI

Hasan Ijaz September 16, 2015



EmbeddedLance

HAAR FEATURES

HAAR-LIKE FEATURES



- · "A general framework for object detection", Papageorgiou et al, 1998
- "Rapid object detection using a boosted cascade of simple features", Viola and Jones, 2001

HAAR-LIKE FEATURES



Detection Method

- · Adjacent rectangular regions at a specific location in a detection window
- · Sum up pixel intensities in each region
- · Calculate difference between these sums
- · Compare this difference with a learned threshold
- · Categorize subsections of image based on this difference

HAAR CASCADE



- \cdot Single Haar-Like Feature is slightly better than random guessing
- · Classifier Cascade
- · Key advantage: Calculation Speed

HAAR CASCADE



How to train Haar Cascades

- · OpenCV
- · Nao Toshi

HAAR CASCADE



Download Trained Cascades

- · OpenCV
- · Alejandro F. Reimondo
- · Face Features

CODE

OFXCVHAARFINDER



- · setup
- · findHaarObjects

YOU CAN NOW DETECT OBJECTS USING A HAAR FINDER :)