Universitat Politècnica de Catalunya
Universitat de Barcelona
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Master in Artificial Intelligence

Computational vision

# Face detection

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# Contents



# List of Figures

# 1 Exercise 1: Haar-like features and classification

## 1.1 Compute and visualize Haar-like features

2

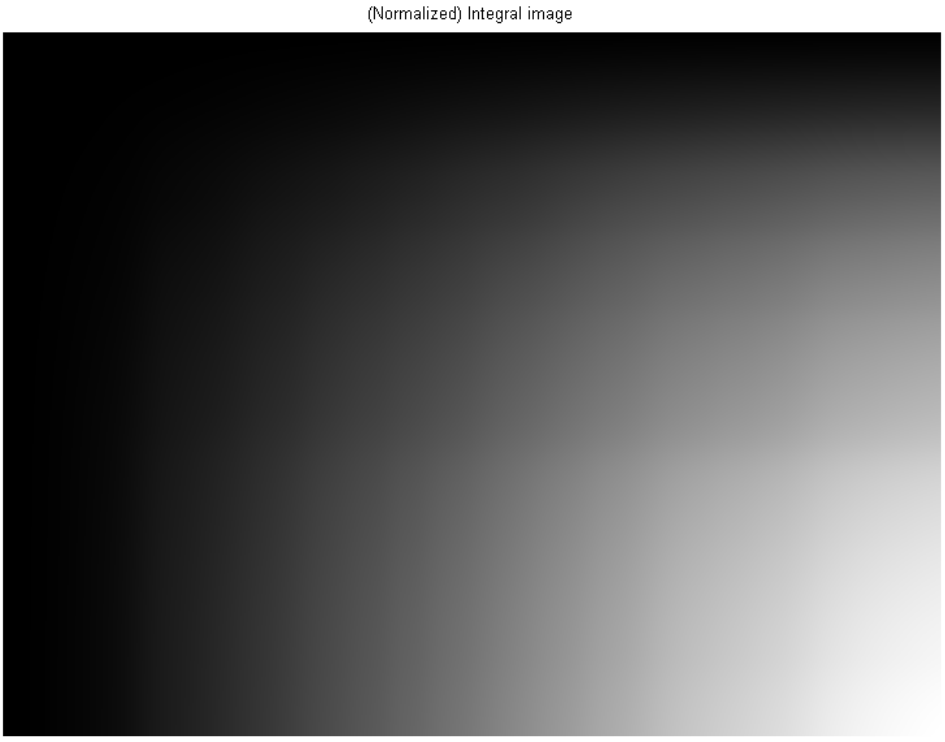


**Figure 1:** Integral image

**Question 1:**

- **Explain the obtained 2-dimensional plot on the feature space.**
- **Given this 2-dimensional plot, can we infer the defined Haar-like features are appropriate for face/non-face discrimination?**

## 1.2 Classification in the feature space

**Question 2:**
**Is the result good enough? Explain your response**
**Question 3:**
**What do you infer from the figure? Explain your response**

# 2 Exercise 2: Apply and evaluate Viola & Jones method on a video

**Question 4:**

- **Is the Viola & Jones method detecting faces in the video frames?**

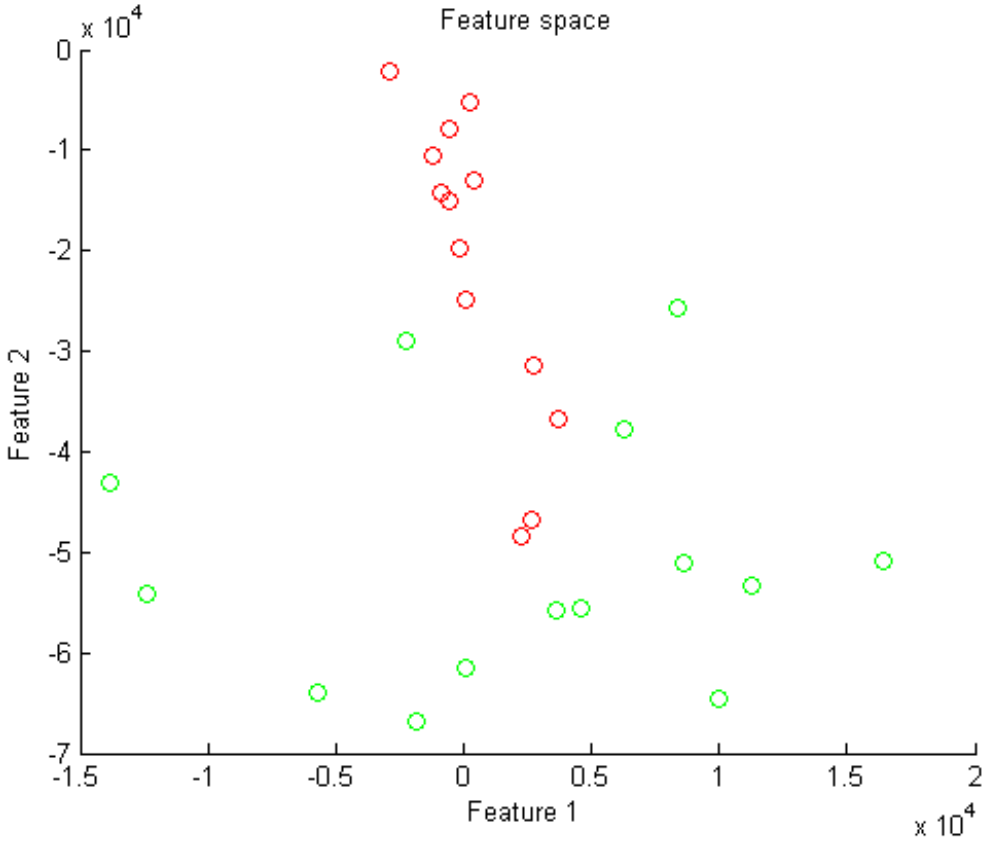


**Figure 2:** Integral image

- **When is the Viola & Jones method not able to detect the faces? Explain your response.**

# Appendices

## A Annex

Some text in the annex.