Computational Vision
Revision Notes

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1 Introduction

These are notes I have written in preparation of the 2017 Computation Vision exam. This year the module was run by Hamid Deghani (H.Dehghani@cs.bham.ac.uk).

Computational vision is the acquisition of knowledge about objects and events in the environment through information processing of light emitted or reflected from objects. In short - we want to make a computer know what is where, by looking through information. We can also use computational vision to do automatic inference of properties of the world from images.

2 Human Vision

As humans we have evolved eyes which percieve the visible section of the electromagnetic spectrum, which falls between the wavelengths of 380nm - 760nm. Red light lies at the longer end (760nm) of visible light, and purple at the shorter end (380nm).

3 Edge Detection

4 Noise Filtering

5 Advanced Edge Detection

6 Hough Transform

7 SIFT

8 Face Recognition

9 Motion

10 ROC Analysis

11 Object Recognition

12 Model Based Object Recognition