



The  
University  
Of  
Sheffield.

Electronic &  
Electrical  
Engineering.

## **EEE6082 COMPUTATIONAL VISION**

**Credits: 10**

### **Course Description including Aims**

This unit focuses on introducing current approaches for computational vision with the main emphasis on a layered approach to image analysis problems and associated probabilistic modelling. These methods are exploited in simple detection and recognition tasks. The outline syllabus includes image feature detection, description and representation, early vision, mid-level vision and high-level vision. The coursework component of this unit aims to provide an understanding of using hardware/software tools in solving practical computational vision problems.

The unit aims to...

1. Introduce current approaches to computer vision
2. Emphasise a layered approach to image analysis problems
3. Introduce image modelling and representation techniques
4. Exploit methods in simple object and action recognition tasks

### **Outline Syllabus**

Image feature detection, description and representation, early vision, mid-level vision and high-level vision

### **Time Allocation**

18 lectures, 4 seminars and 2 programming sessions.

### **Recommended Previous Knowledge**

UG level 3 (or equivalent) understanding of basic signal processing, computing and/or applied mathematics.

### **Assessment**

Two hour examination.  
Coursework.

## **Recommended Books**

Computer Vision: Algorithms and Applications, Richard Szeliski

Computer Vision – A Modern Approach, David A. Forsyth, Jean Ponce