



The
University
Of
Sheffield.

Electronic &
Electrical
Engineering.

EEE6085 SELECTED TOPICS IN COMPUTER VISION ENGINEERING

Credits: 15

Course Description including Aims

This unit is concerned with facilitating student learning in basic and emerging topics in computer vision engineering (CVE) with a predominantly application point of view. It aims to introduce practical aspects of selected topics in CVE, introduce and practice relevant research methods and scientific techniques, to provide hands on experience in software and hardware design and implementation of simple CVE systems, provide the opportunity to work independently or collaboratively within small groups and provide oral and written communication skills appropriate for the presentation of technical information.

These aims will be achieved by combination of lectures, laboratory sessions and independent studies. Every year 3 topics are chosen and delivered via these means considering the opportunities for problem/enquiry based learning and research led teaching within each topic. This module is continuously assessed by means of course works associated with the selected topics.

This unit aims to

1. Provide understanding of state-of-the-art and emerging computer vision engineering topics in an application point of view.
2. Introduce research methods and scientific techniques relevant to computer vision engineering.
3. Provide hands on experience in software and hardware design and implementation of simple computer vision engineering systems.
4. Provide the opportunity to work independently or collaboratively within small groups.
5. Provide oral and written communication skills appropriate for the presentation of technical information.

Outline Syllabus

Three topics will be chosen from the following areas related to computer vision engineering

- 1) Image and video processing
- 2) Computational vision
- 3) Visual Information Engineering

The topics will be different from year to year.

Time Allocation

36 contact hours (12 hours per topic) in total consisting of

- 6 hours of lectures
- 18 hours of support sessions
- 12 hours of support lab sessions

Recommended Previous Courses

EEE6081, EEE6082, EEE6086

Assessment

100% Coursework (demonstration of implementation and a written report)

Objectives

By the end of the unit, a successful candidate will be able to

1. Understand the basic and emerging topics in computer vision engineering.
2. Review the latest research in selected topics.
3. Design and implement simple software systems suitable for computer vision engineering applications.
4. Design and implement simple hardware systems suitable for computer vision engineering applications.
5. Analyse and evaluate the performance of the implemented systems
6. Produce and deliver written presentation of technical information.
7. Produce and deliver oral presentation of technical information