Scene Segmentation and Interpretation

Image Segmentation

Introduction

The segmentation is an essential part of many computer vision systems. The goal is the partition of an image into a set of non-overlapped regions whose union is the entire image. For instance, the Region Growing algorithm is a well-known solution, fast, easy to implement and provides good results even for complex images.

In this coursework the main goal is to develop a Region Growing algorithm for segmenting an image. The implemented algorithm should work for grey level images and colour images.

Matlab guidelines:

- Recursive implementation is going to be a problem due to the maximum number of recursive calls allowed. Therefore, sequential implementation is preferable.
- The segmentation labelling can be done in grey level or colour.

Objectives

A) Information search. Team work.

B) To understand the segmentation algorithm. To design, analyse and implement the algorithm in matlab.

C) To test the algorithm at least with the provided images. To study the problems and possible improvements.

D) Documentation.

Coursework: (4 hours)

A) Coursework with the following sections:

1) Introduction and problem definition.
2) Algorithm analysis.
3) Design and implementation of the proposed solution.
4) Experimental section and results analysis (speed, quality, etc).
5) Organization and development of the coursework (tasks, time estimations and real dedication).
6) Conclusions.

B) Matlab code with comments.

Coursework Evaluation:

A) During the labs.

B) After the coursework.