**Image Processing Project 2**

**Materials and Implementation of**

1. learn and **compare** the concept of edge detectors (e.g. Sobel,Robert,Prewitt,Laplacian,Canny… ). Please list their functions and explain every element in the function.
2. Implement the operation of these detectors and observe the different effects of them. To select one of the quality measures, evaluate their performance are good or not (e.g. whether they are consecutive, in correct positions and so on).
3. **How to improve your results based on previous detectors, like making the edge maps consecutive? (e.g. some preprocessing steps—Gussian filters (Canny detector used) and so on.) Hints: to search the papers based on ScienceDirect websites.**
4. Figure out what is computer vision and the usage of edge maps and detectors, like their implementation in Computer Vision.

**Additional projects:**

1. Learn and distinguish the concepts of spatial domain and frequency domain.
2. List some methods which can transform an image from spatial domain into frequency domain. Please implement them.
3. The previous edge detectors are all in spatial domain. Could you find another edge detection method in frequency domain?
4. Evaluate and compare the edge detection methods in both spatial and frequency domains.

**Submission:**

(1) You should show me a project report with your source codes as appendix. One sample reports is attached for your reference.

(2) You are expected to give a 20-minute presentation in English to me (recommended) such that I will know how much you have learnt from the project. You also are recommended to send your PPT file to me before the presentation day.