Due on 28 March 2025

Computer vision - Assignment 4

1. This folder contains the images RBCs.bmp and ricegrains.jpg. Download these two images and use morphological processing to count the number of elements in these images. For this:
   (a) Threshold the image manually by observing a suitable threshold using the histogram of the image
   (b) Use the morphological erosion operation in OpenCVto separate the elements in the images
   (c) use the findContours function in OpenCV to find and further count the number of objects (RBCs and rice grains respectively) in these images.

2. In this question, each student in the class will be assigned one object detection model to study in depth. Each student is expected to write a brief review of the model assigned to them, which should ideally be not more than two pages long. This review should be a self-contained self-study note about the model. It should contain the important elements of study of a deep learning model such as the core idea, architecture diagram, information about its core characteristics and the loss function used, any other information/insight about the model that is deemed important. Each note should include a few lines about the working of the model, starting from input image, how it proceeds through the pipeline and the nature of the output.

Aishvarya	RCNN
Mayank	SPPNet
Aalekhya	Fast RCNN
Nooh	Faster RCNN
Alena	FPN
Ananya	YOLO
Om	SSD
Parnikaa	RetinaNet
Harsh	DeTR
Chandranath	Mask RCNN
Soumyajoy	

Kindly submit this assignment problem as a separate pdf so that everyone's notes can be posted on Moodle for everyone's benefit.