EXERCISE 9

CASE STUDIES

In order to pass the class, you have to complete at least 3 of the presented tasks ie. TASK 1 and TAST 2/3 and TASK 4/5. Realisation of each additional task will be rewarded with additional points.

TASK 1. INSCRIPTION REMOVING

1. For the colour image TEXT.BMP propose an algorithm that will be used for removing the inscription from this image. The removing procedure should not damage the original text in the image.
2. Implement the proposed algorithm in MATLAB and test it.

TASK 2. ANALYSIS OF DICE IMAGES

1. Propose an algorithm for calculating a number of dots on each dice presented in the images.
2. Implement your algorithm in MATLAB and test it. For test use images from directories DICES PART 1 & 2.
3. Check if the results the same for both backgrounds used during image acquisition? Which background is a better choice for this task?

TASK 3. DETECTION OF DICE IN IMAGES

1. Propose an algorithm for detection of dice in images.
2. Implement your algorithm in MATLAB and test it. For test use images from directories DICE.

3. Check if your method works for images from directories DICES PART 1 & 2.

TASK 4. THE INSPECTION OF CANS

1. Propose an algorithm for a vision system that is used for detection of opened cans on the production line. You can use both grey-scale and colour images.
2. Implement this algorithm in MATLAB and test it. The program should be as fast as it is possible.
3. Test your program for 3 images from directory CANS.

TASK 5. THE INSPECTION OF BOTTLES

1. Propose an algorithm for a vision system that can be used for inspection of bottles. You have to check if the bottles are full and closed—only bottles fulfilling that two condition can pass the inspection.
2. Implement your algorithm in MATLAB and test it. The program should be as fast as it is possible.
3. Test your program for 3 images from directory BOTTLES.

Additional information

An important remark: a phrase "implement an algorithm" means to write your version of a program realising of the chosen algorithm, and it does not mean find and use instruction which realizes the chosen algorithm.

In case of this exercise, there is no division into a full report and short report for this exercise. There is also no requirement to obtain a minimum number of points during classes.