Machine Vision 2018

Home assignment

There are 2 alternative topics (tasks) in the Home Assignment. The student must choose either one of these.

Topic 1: Calculation of number of bottles in a crate.

In this topic, the task is to create a machine vision program which is able to calculate the number of bottles in a crate. Below are the images containing a varying number of bottles in a crate. The more images the program is able to cope with, i.e.

to calculate the correct number of bottles, the better the grade (0-5) given will be. **This topic can be done in groups of 1-3 students.**

bottle_crate_01.png

bottle_crate_02.png

bottle_crate_03.png

bottle_crate_04.png

bottle_crate_05.png

bottle_crate_06.png

bottle_crate_07.png

bottle_crate_08.png

bottle_crate_09.png

bottle_crate_10.png

bottle_crate_11.png

bottle_crate_12.png

bottle_crate_13.png

bottle_crate_14.png

bottle_crate_15.png

bottle_crate_16.png

bottle_crate_17.png

bottle_crate_18.png

bottle_crate_19.png

bottle_crate_20.png

bottle_crate_21.png

bottle_crate_22.png

bottle_crate_23.png

bottle_crate_24.png

Topic 2. Breast cancer diagnostics.

The task is to create machine a vision program(s) which are capable of segmenting the given breast cancer images according to the overlays presented in overlay images. The goodness of the solution is measured and determined according to the accuracy in which the new solution is able to follow the overlay boundaries. IDC = Invasive Ductal Carcinoma. DCIS = Ductal Carcinoma in Situ. F = Fat. BV = Bood Vessel. IC = Inflammatory Cells. L = Lobule. **This topic can be done in groups of 1-3 students.**

Kuva1.tif

Kuva1_Overlay.tif

GR32.tif

GR32_Overlay.tif