## Machine Vision 2018

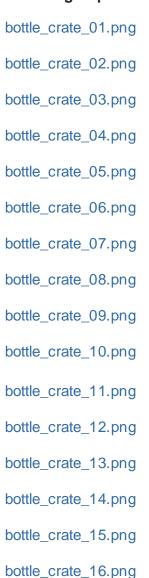
## Home assignment

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\_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