

## **Homework 3**

### **(15 points)**

- There is a picture that includes several chickens (chicken clean.png), and there is a picture of a bug (bug.jpg).
- You should write an algorithm that find the coordinate of the bug inside the picture. This means that you need to read the bug coordinate and report it in the output, no GUI is needed.
- It is not allowed to use any image recognition library, e.g. openCV, Jmagic, etc.
- Your video should include manually putting a bug on the “chicken clean.png” picture and test your algorithm and the algorithm should say the position of the bug.
- In other words, you will need to put the bug in the picture and then search for its position in terms of x and y coordinate. If you are comfortable scaling the bug size I am ok with it. You can make it larger to read it better.
  - I recommend to convert the original image into segments (set of patches), and then each segment into time series. Also convert the bug image into time series. Next, apply time series smoothing. Then, compare time series together and find the most similar patch to the bug image (based on comparing time series).  
In other words, convert each segment into time series. Then by moving segment per segment, i.e. using patch, you can measure the similarity of time series and identify the coordinates of the bug in the picture.
- Your video should include experimenting with at least three different placement of the bug and execution of the algorithm.