**PROJECT PROPOSITION - Lab1** (M1, second semester)

Supervisor(s): jb FICHE

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Hosting lab: CBS 60 – Nöllmann’s group

Period of proposed project (put **x** instead of ロ) :

x Only 1st slot ロ Only 2nd slot

ロ One slot, but I have no preference on which ロ Both slots (with different groups)

1st slot: thursdays and fridays, from 3/2/2021 to 18/3/2021

2nd slot: thursdays and fridays (except for the last 2 weeks), from 31/3/2021 to 6/5/2021

Image deconvolution using Deep Learning

Subject (5 lines max for the description)

Deconvolution is an image processing technique widely used in epifluorescence and confocal microscopy to improve the contrast and the resolution of images. Many deconvolution algorithms have been developed but they are often slow and computationally demanding. We would like to test deconvolution techniques based on artificial intelligence and deep learning and test whether they are faster and as efficient as state-of-the-art commercial softwares (Huygens).

Technical tools to be used:

Python programming

the CSBdeep toolkit (https://csbdeep.bioimagecomputing.com/)

Objectives:

Implement and test the CARE networks on drosophila embryo & bacteria microscopy images.