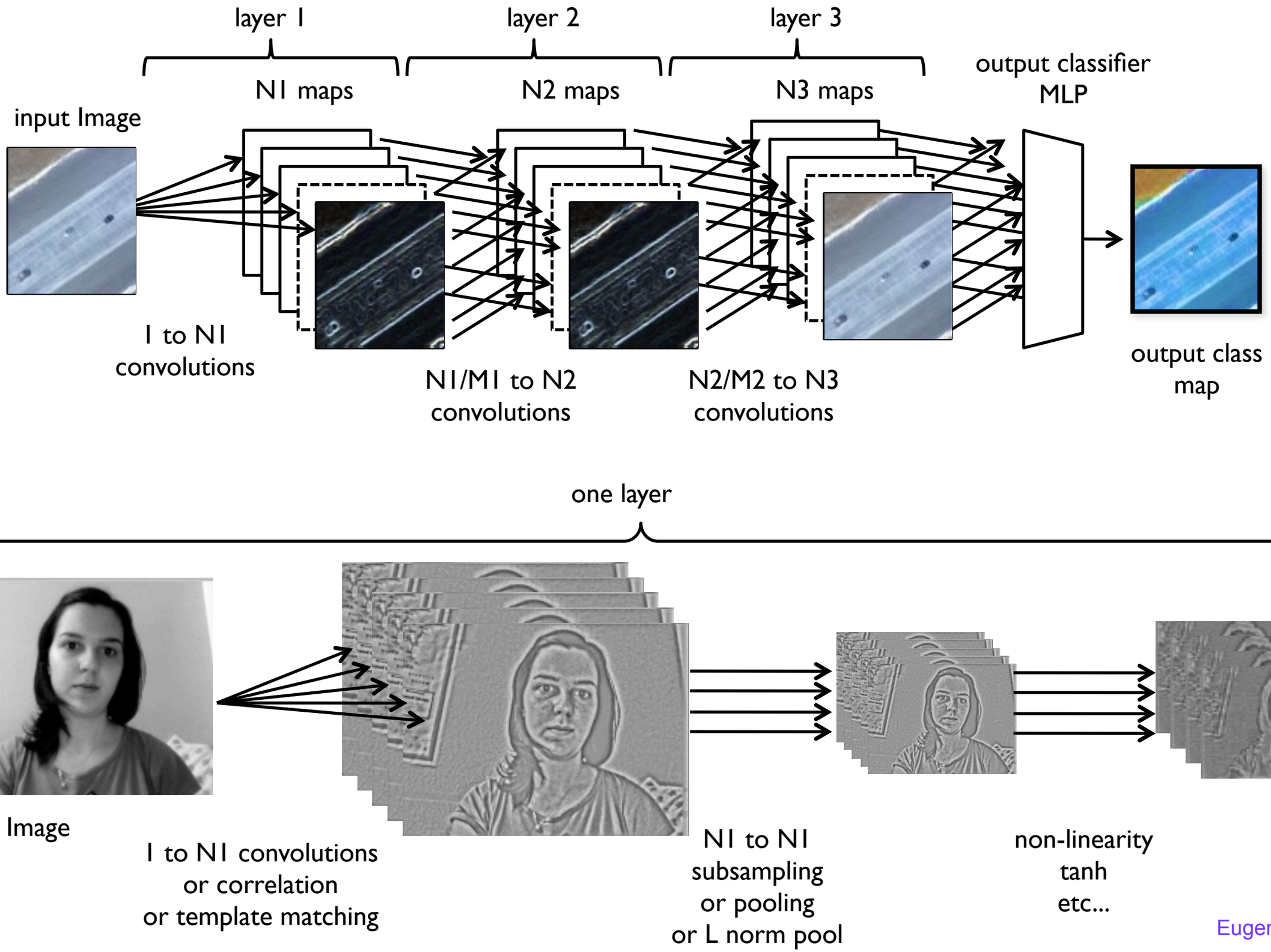
Artificial and robotic vision

Eugenio Culurciello

Lecture 8+: thoughts and tips on Deep Learning

e-Lab

deep networks



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deep networks

deep networks

datasets issues:

- always different in real life applications?
- trained in one, failed in another
- having the wrong test set

overfitting

- the model is too complex and learns noise in the data, not just data
- need to make sure the model adapts to data

deep networks

- convnets/deep networks

need features to learn:

- if the object is too simple, it is hard to learn: it has no “distinctive features”

32x32 on cheek

full pic

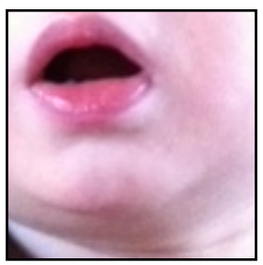
deep networks

adding more of the image as input to convnet helps

>> fovea idea

32x32

100x100



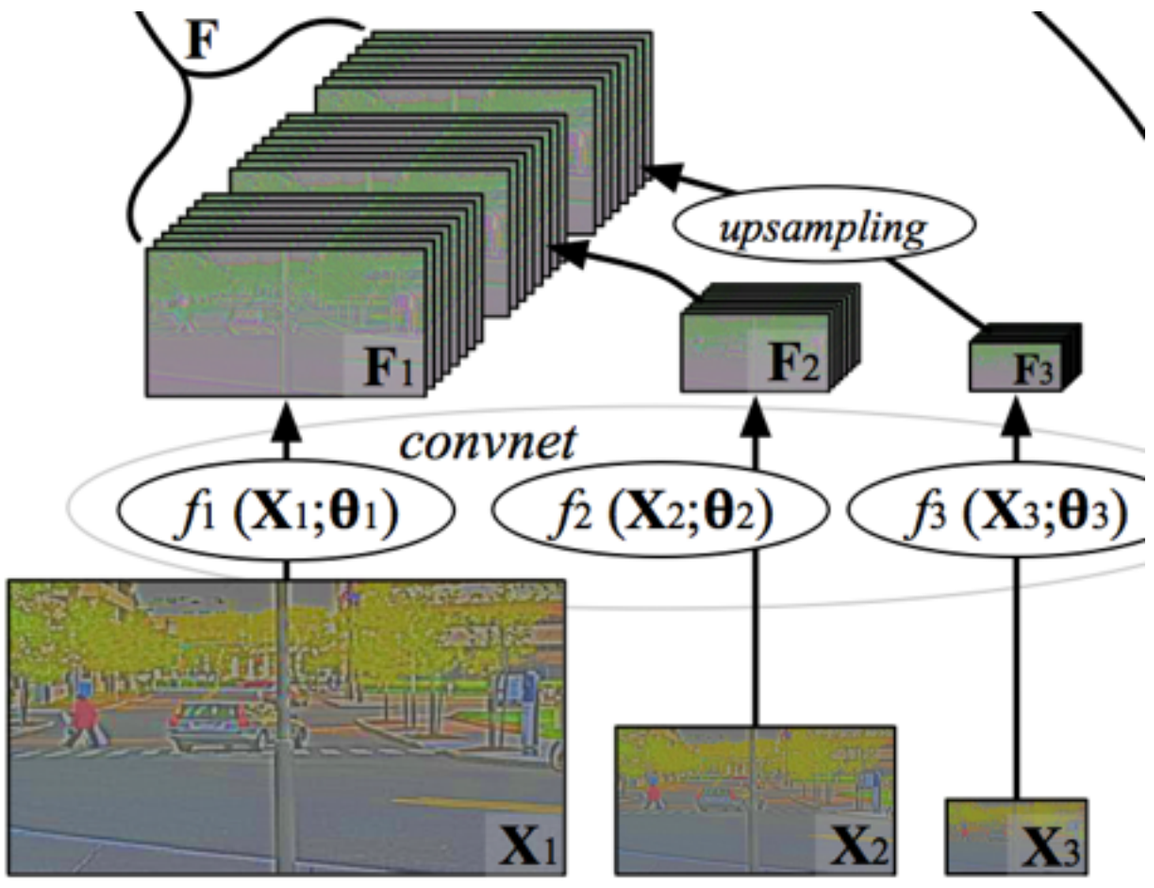
full pic

e-Lab

deep networks

adding more of the image as input to convnet helps
>> fovea idea = MULTISCALE! / pyramids

- also if object too complex, maybe low res of convnet input cannot capture all features



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