



UNIVERSITÀ DEGLI STUDI DI MILANO
DIPARTIMENTO DI INFORMATICA

Deep Learning in Matlab

Deep Learning in Biometrics

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Summary

- Introducing Deep Learning with MATLAB
- Use a pretrained CNN
- Train a CNN
- Transfer learning and CNNs as feature extractors
- Pretrained networks
- Autoencoders

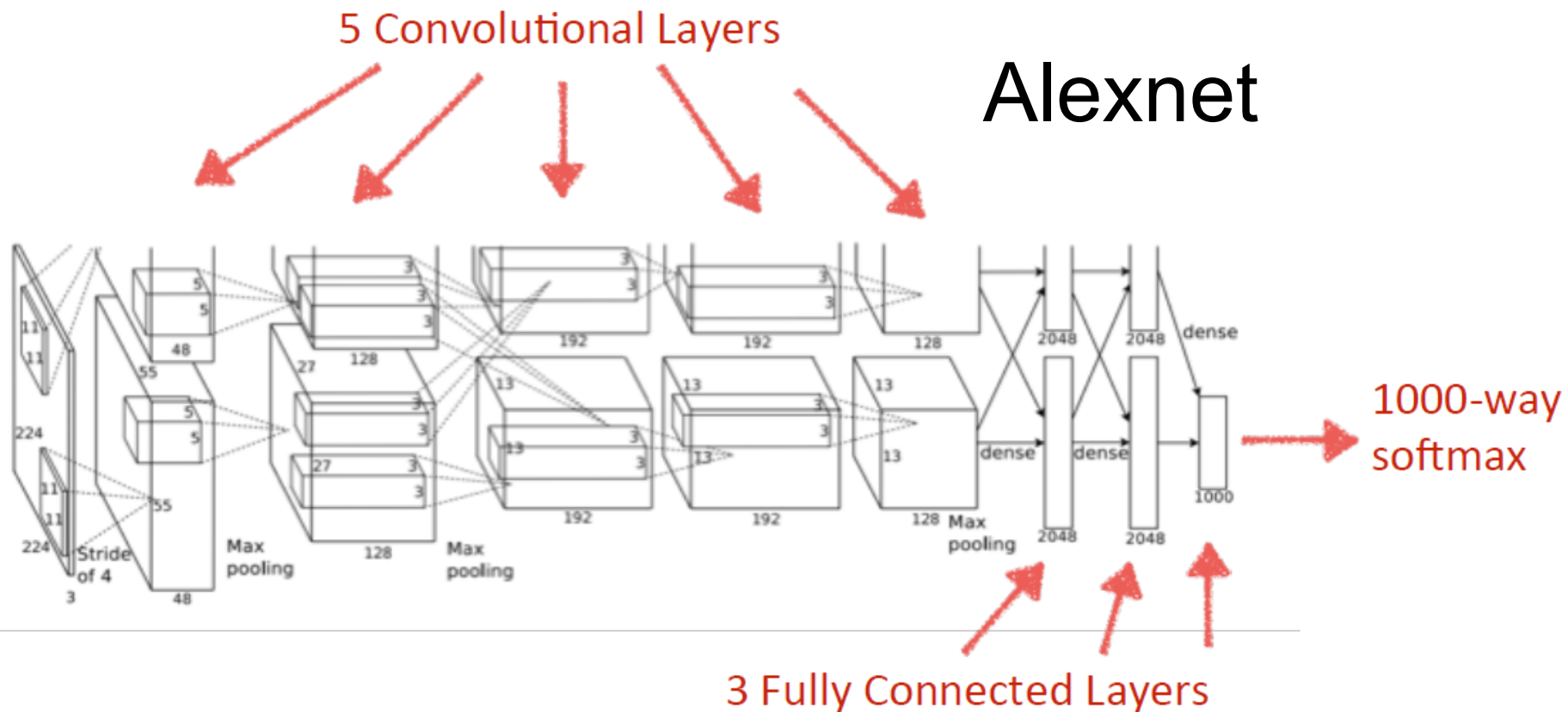


Introducing Deep Learning with MATLAB

- <https://it.mathworks.com/campaigns/products/offer/deep-learning-with-matlab.html>
- <https://it.mathworks.com/videos/series/introduction-to-deep-learning.html>



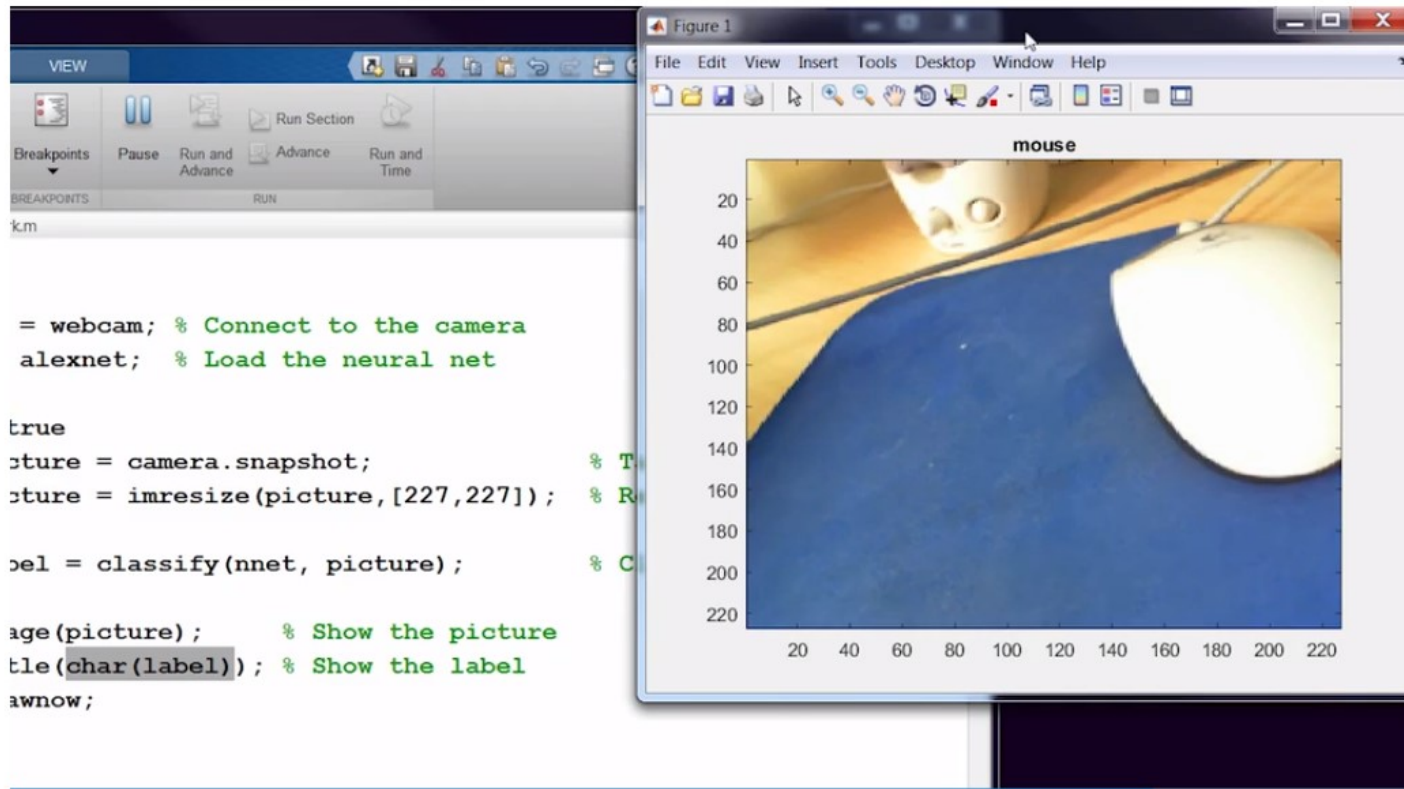
Use a pretrained CNN (1/2)



- http://vision.stanford.edu/teaching/cs231b_spring1415/slides/alexnet_tugce_kyunghee.pdf
- <https://it.mathworks.com/help/nnet/ref/alexnet.html>



Use a pretrained CNN (2/2)



- <https://it.mathworks.com/videos/deep-learning-in-11-lines-of-matlab-code-1481229977318.html>

Train a CNN

- <https://it.mathworks.com/videos/training-a-neural-network-from-scratch-with-matlab-1492008542195.html>
- <https://it.mathworks.com/campaigns/products/offer/deep-learning-with-matlab.html>



Transfer learning and CNNs as feature extractors

- <https://it.mathworks.com/videos/transfer-learning-with-neural-networks-in-matlab-1492007175092.html>
- <https://it.mathworks.com/videos/using-feature-extraction-with-neural-networks-in-matlab-1492009542601.html>

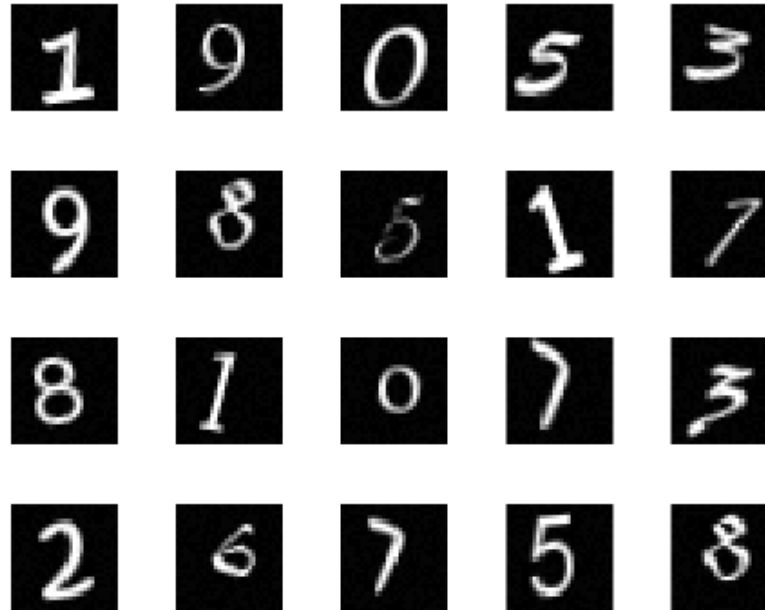


Pretrained networks

- <https://it.mathworks.com/help/nnet/ug/pretrained-convolutional-neural-networks.html>
- <https://github.com/BVLC/caffe/wiki/Model-Zoo>



Autoencoders



- <https://www.mathworks.com/examples/neural-network/mw/nnet-ex33663708-train-stacked-autoencoders-for-image-classification>