

ConvNets

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# Machine Vision

## Deep Learning — Unit 4

Dr. Jon Krohn

jon@untapt.com

October 28th, 2017

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LeNet-5

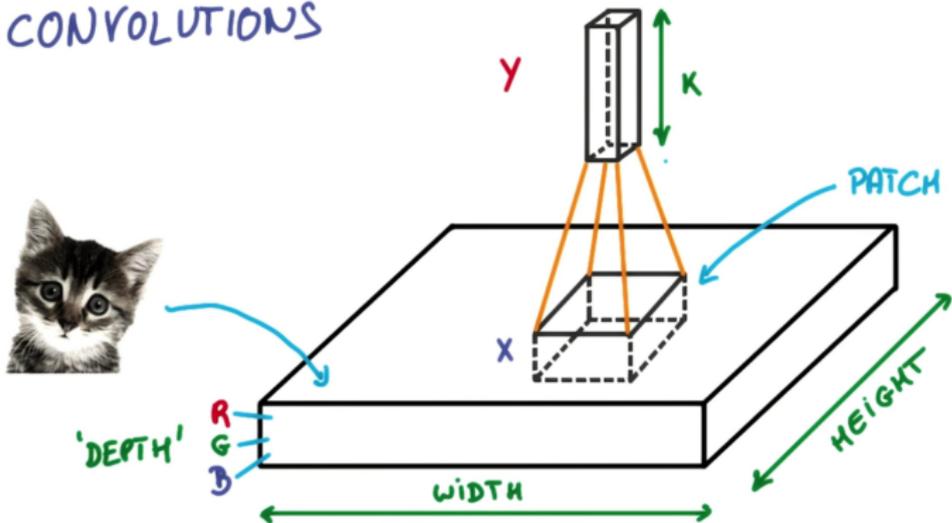
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# CONVOLUTIONS



# DeepVis

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[deepvis]

# Convolution Demo

from the illustrious [Andrej Karpathy]  
(*everyone* gets a turn on whiteboard)

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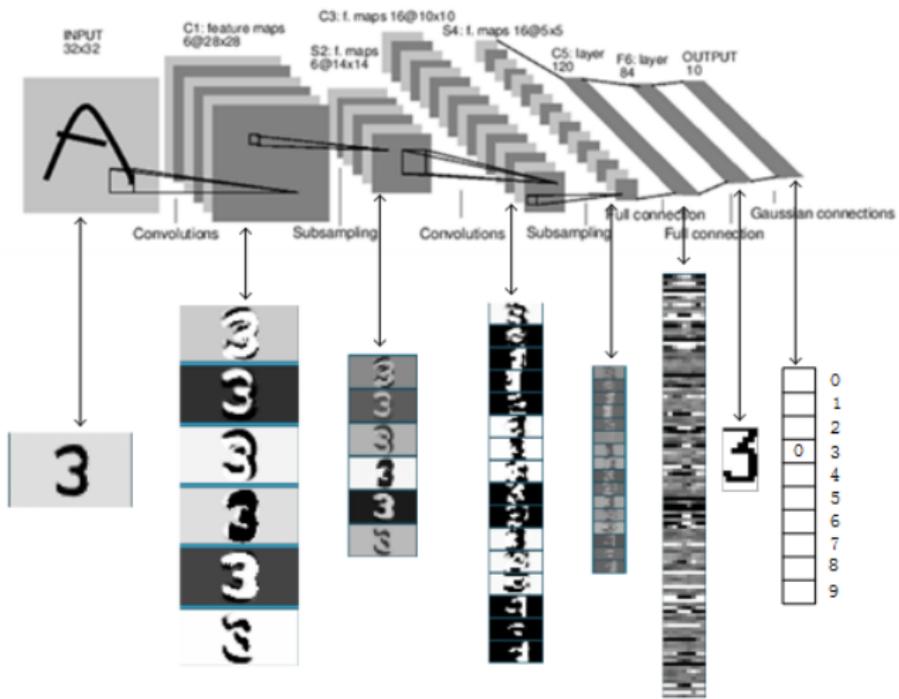
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# LeNet-5



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let's make our [deep net] *convolutional!*

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# AlexNet

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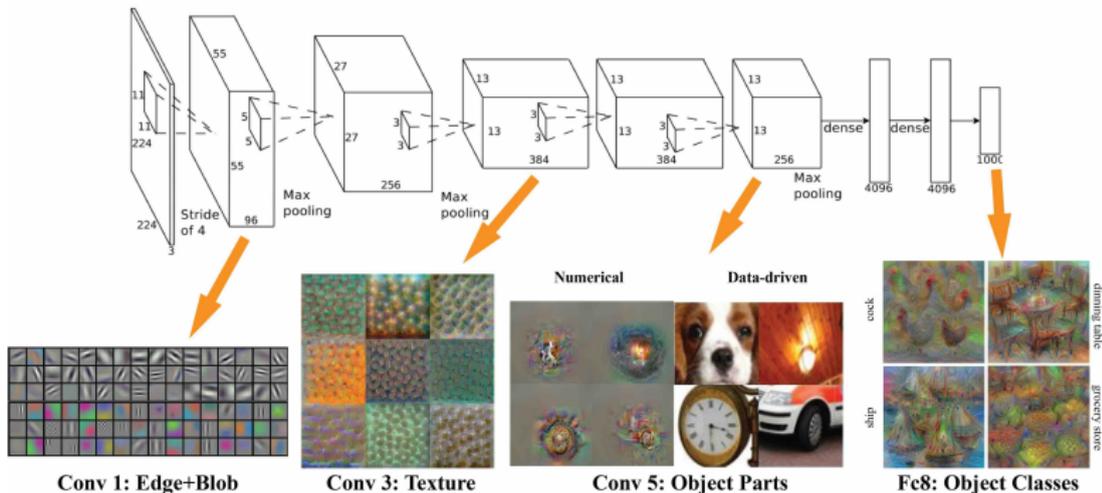
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[AlexNet] from scratch

# VGGNet (Simonyan & Zisserman, 2014)

## Take-Home Exercise III

- build VGGNet from AlexNet notebook
- be able to verbalize all Arsenal (Theory I-IV) items

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- [toy example]
- [pre-trained model weights in Keras]
- [beefy bottleneck features example]

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# Formulating

## Your Deep Learning Project II



# Formulating

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  - training set (80% — for optimizing parameters)
  - validation set (10% — for hyperparameters)
  - test set (10% — don't touch yet!)
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  - if machine vision (incl. transfer learning), *now*
  - if NLP, wait until next session
- 3 get above chance (simplifying problem, if necessary)

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# Natural Language Processing

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