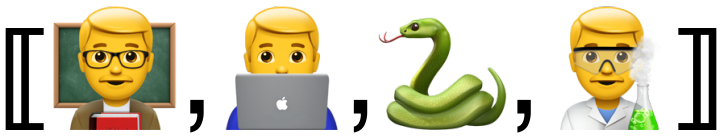
Lecture Notes for

Machine Learning in Python



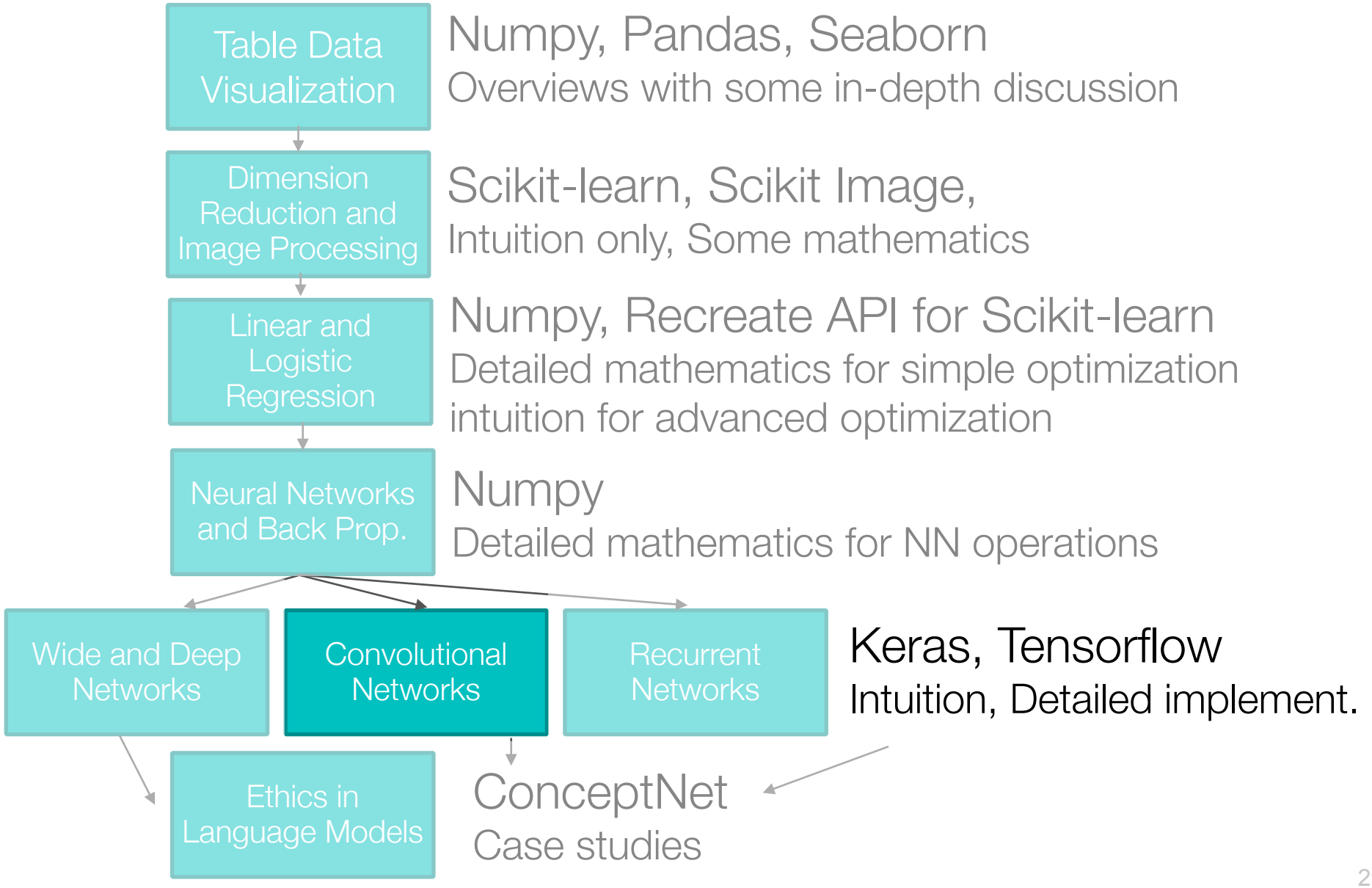
Professor Eric Larson

Unboxing Convolutional Networks

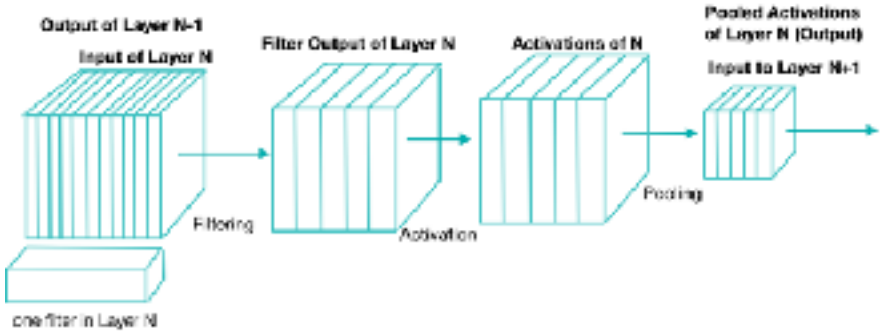
Class logistics and Agenda

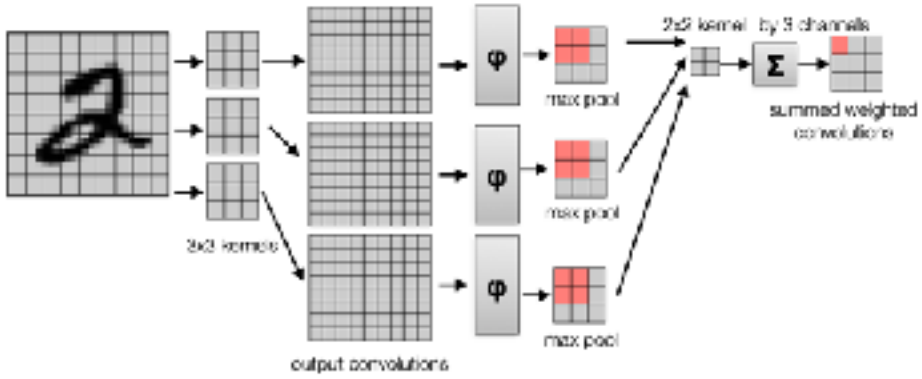
- Wide/Deep Lab due soon!
- Agenda:
  - Finish CNN Discussion
  - CNN Demo
  - CNN town Hall
- Next Time:
  - More Advanced CNN Demo

Class Overview, by topic

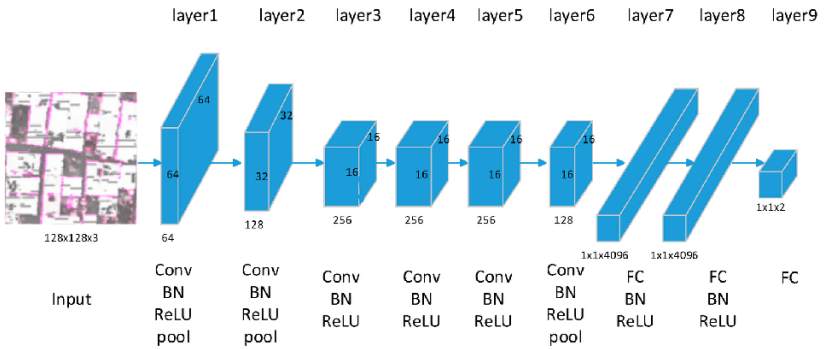


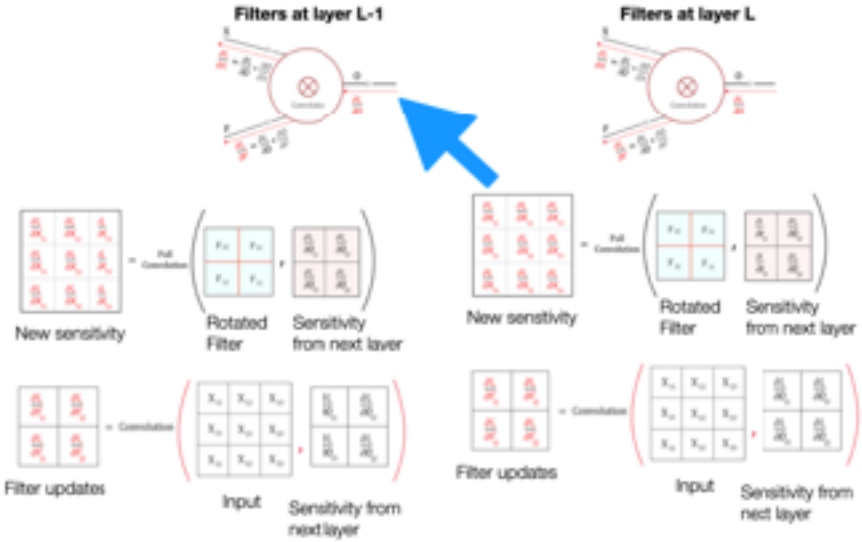
Last Time:



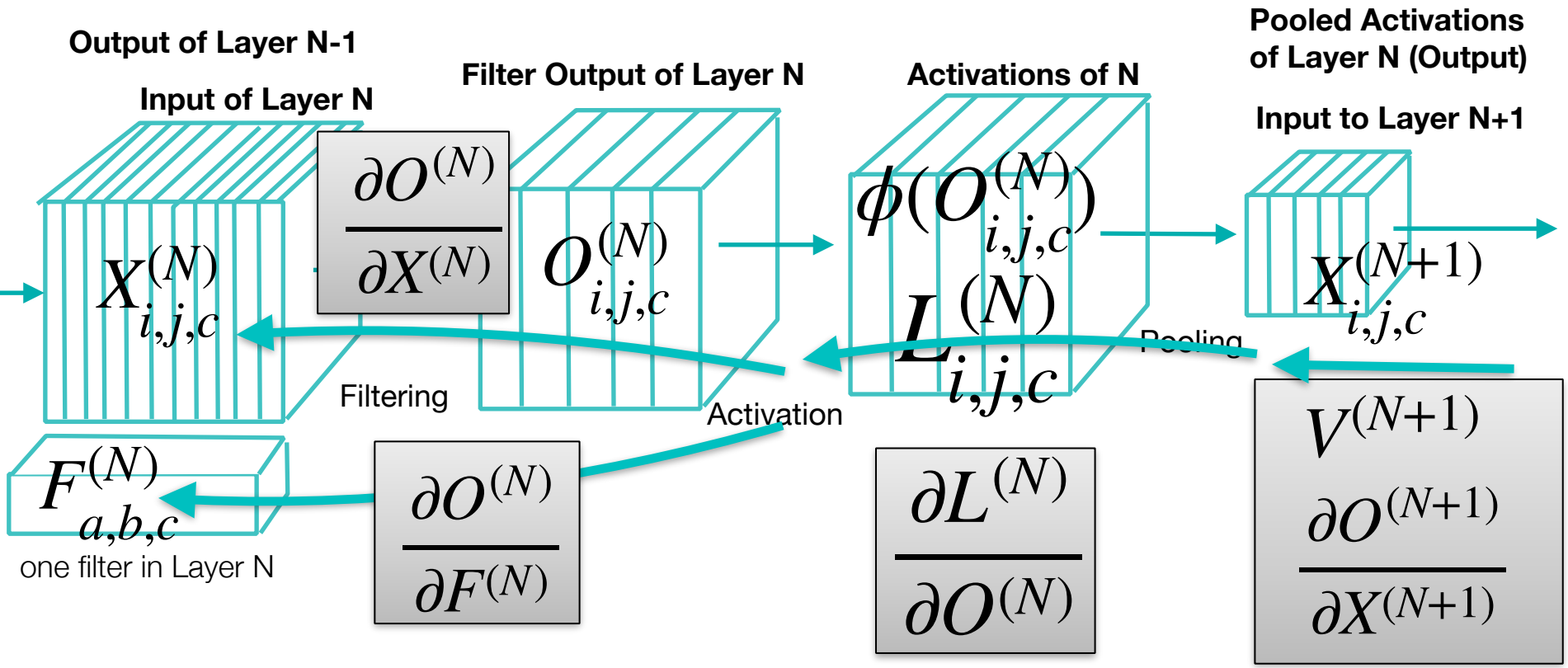


Structure of Each Tensor: Channels x Rows x Columns



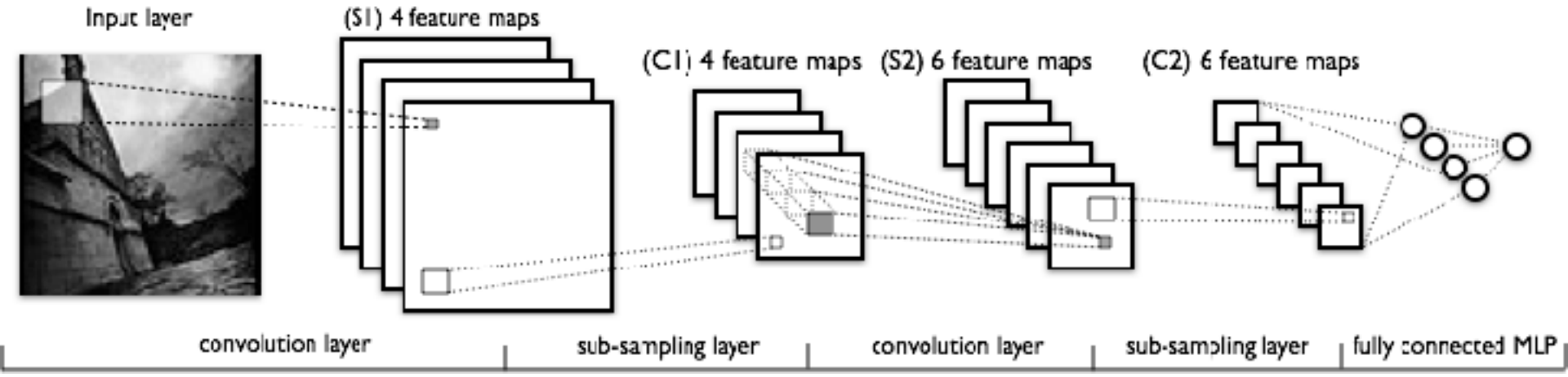


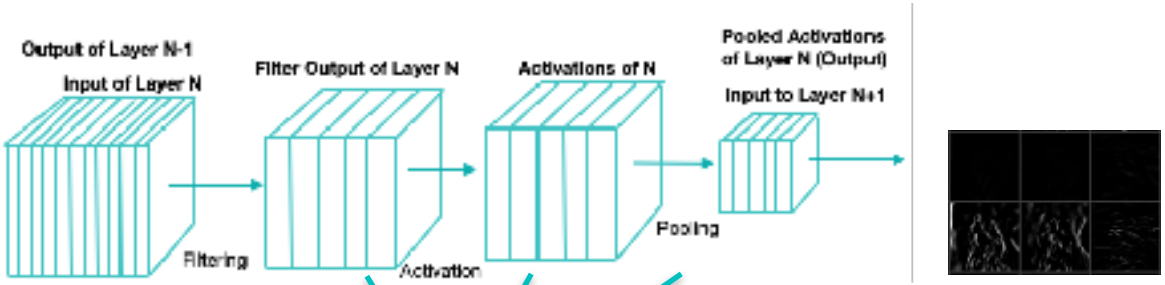
Last Time: CNNs, Putting it together



Structure of Each Tensor: Channels x Rows x Columns

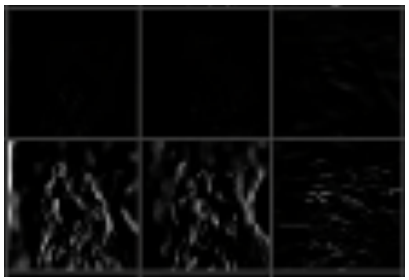
Some Example CNN Architectures





Visualize each channel

(batch, channels, i, j)



Naming:
conv1 (output of conv)
p1 (output of pooling)
n1 (output of normalization)

CNN: Visuals

Deep Visualization Toolbox

yosinski.com/deepvis

#deepvis

Jason Yosinski

Jeff Clune

Anh Nguyen

Thomas Fuchs

Hod Lipson

Cornell University

University of Wyoming

NASA Jet Propulsion Laboratory
California Institute of Technology

https://github.com/yosinski/deep-visualization-toolbox

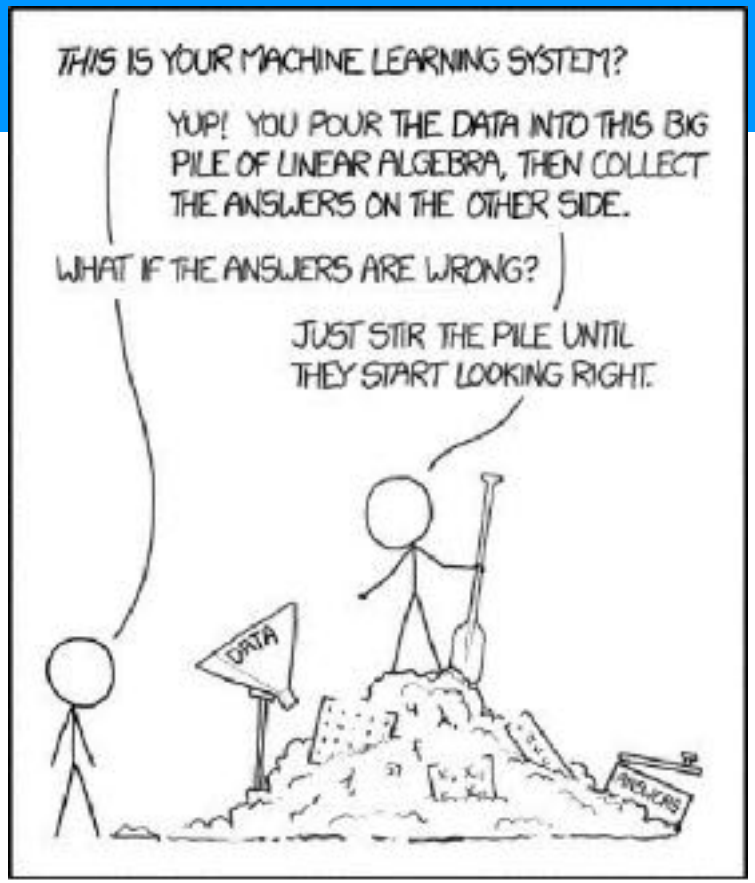
TensorFlow and Basic CNNs

Convolutional Neural Networks
in TensorFlow
with Keras

Demo

`11. Convolutional Neural Networks.ipynb`

CNN Town Hall



Machine Learning 101

Next Lecture

- More CNN architectures and CNN history