DEEP LEARNING WITH ARTISTIC STYLE

LUKE GODFREY & STEPHEN ASHMORE

Software Engineers @ supplypike

Github:

github.com/casestack/nwd-neural-style

Machine Learning Fireside Chat

2:15 - 3:15pm
Record Patio

EXAMPLES

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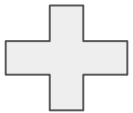

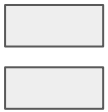

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#nwd2018

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WHAT IS A NEURAL NETWORK?

An Image as Input

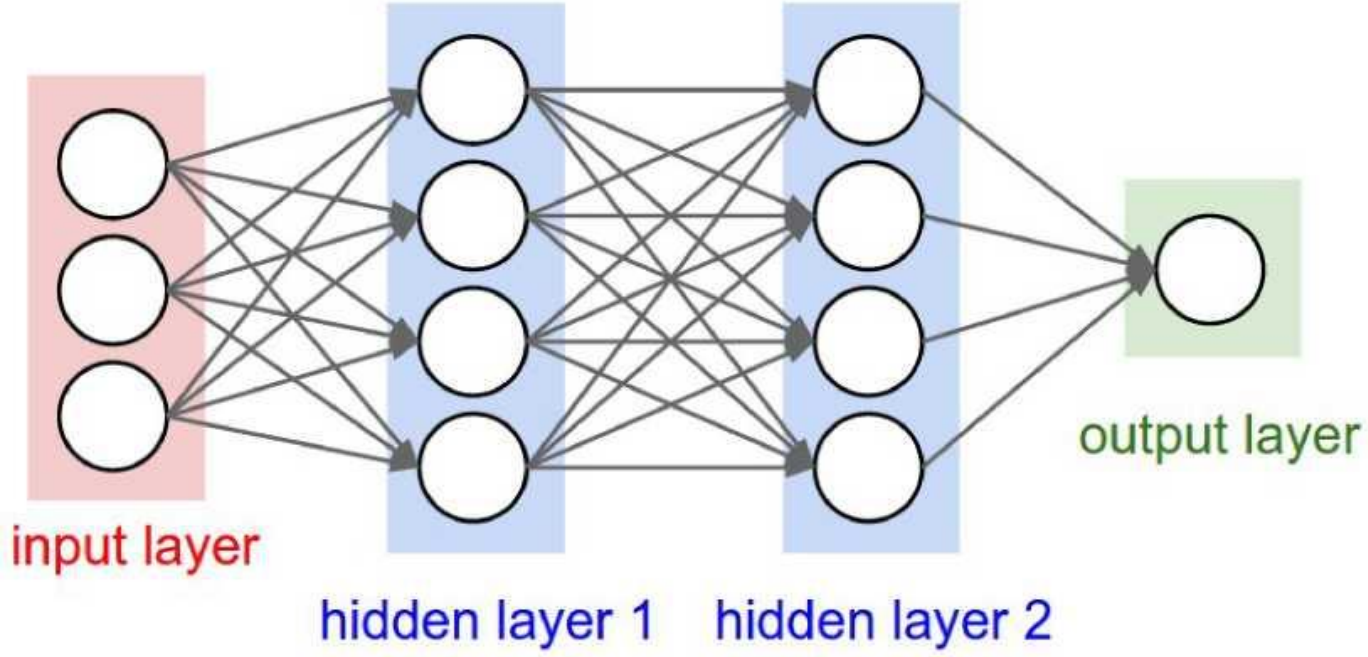
Neural Network

Bitcoin Price for next Day
Green

WHAT IS A NEURAL NETWORK?

- Roughly mimics the human brain
- Composed of **many** neurons arranged in a series of layers
- Using weighted sums a neural network with the right **parameters** can “approximate/model” anything
- The **parameters** of the neural network start as random numbers, but are learned by mathematical wizardry
- **Research** is concerned with creating new types, new applications, and new combinations of neural networks
- **Practical use** is concerned with using a pre-existing model, or constructing a neural network from known layers

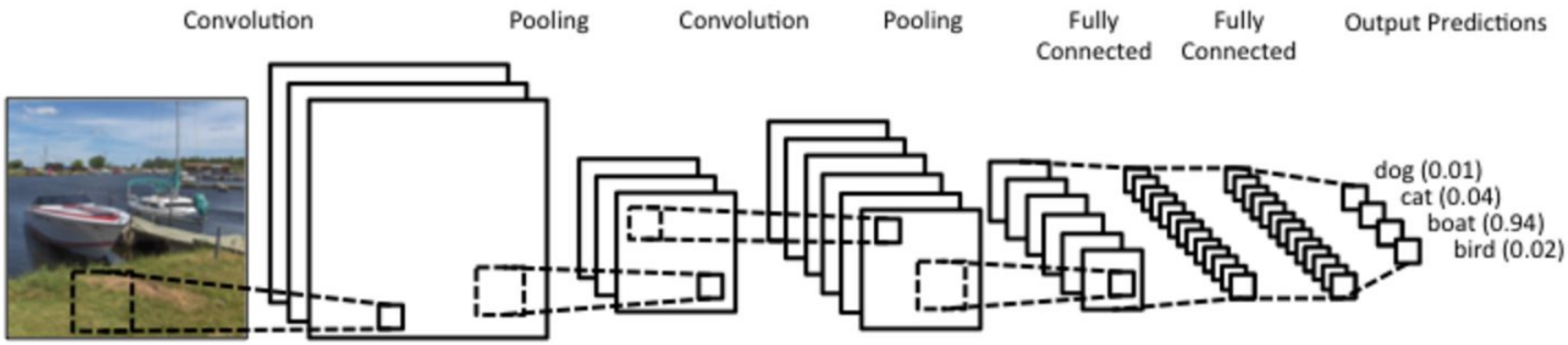
WHAT IS A NEURAL NETWORK?



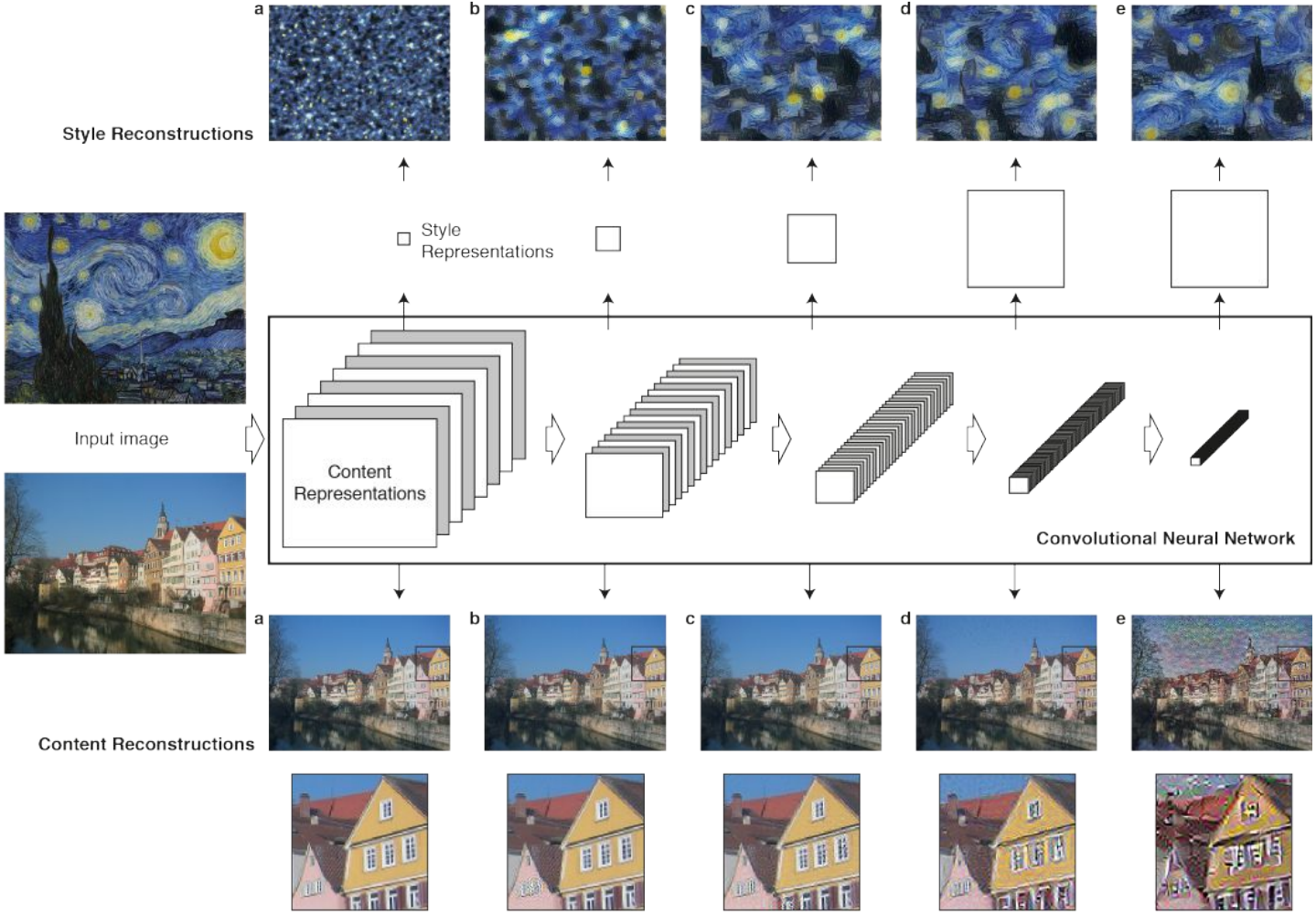
WORKING WITH IMAGES

- Images present their own problems:
  - Very large dimensions (a 256x256 picture becomes 256*256*3 = 196,608 inputs)
  - Similarity between local pixels
- Convolutional neural networks are well-suited for images
- Convolution reduces the number of parameters needed to process large images
- Learns spatial relationships between local pixels

WORKING WITH IMAGES: CONVOLUTION



DIGGING INTO THE CODE


a
b
c
d
e
Style Reconstructions
Style Representations
Input image
Content Representations
Convolutional Neural Network
a
b
c
d
e
Content Reconstructions

DIGGING INTO THE CODE

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