

# Unboxing ML Models

...and a look at CoreML

[github.com/rhdeck/bostonai](https://github.com/rhdeck/bostonai)

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Input Shape

“The Graph”

Conv2D, ReLU, MaxPool, etc...

Output Shape

Keras

HDF v5

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TensorFlow

Caffe (both)

CNTK

Protobuf

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Theano

Sci-Learn

Pickle

Torch

# HDF5

Made by NCSA ~1997

Parallels file system structure

HDFView <https://support.hdfgroup.org/products/java/release/download.html#bin>

Panoply <https://www.giss.nasa.gov/tools/panoply/>

# Protobuf

Made by Google ~2001

Solve generalized object serialization

Many tools - just search for “protobuf viewer”

Hot Tip: Find the Schema!

# Schemas!

Just Add “github.com/”

BVLC/caffe/blob/master/src/caffe/proto/caffe.proto

Microsoft/CNTK/blob/master/Source/  
CNTKv2LibraryDll/proto/CNTK.proto

tensorflow/tensorflow/blob/master/  
tensorflow/core/framework/graph.proto

# Goin' to the Zoo

[github.com/BVLC/caffe/wiki/Model-Zoo](https://github.com/BVLC/caffe/wiki/Model-Zoo)

[microsoft.com/en-us/cognitive-toolkit/features/model-gallery/](https://microsoft.com/en-us/cognitive-toolkit/features/model-gallery/)

[github.com/tensorflow/models](https://github.com/tensorflow/models)

Keras?

# CoreML

`pip install coremltools`

## CoreML Framework

## Xcode Helpers



# It's a Protobuf!

```
pip install coremltools
```

```
coremlconverter
```

```
Use virtualenv, Python 2.7
```

# Xcode Drag-Drop

Add to your target!

Auto-builds the project

# Digging Deeper

MLModel.compileModel(url: URL) -> URL

MLModel.init([url:URL](#))

MLDictionaryFeatureProvider

My Model is Not Your Model

Thank You

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