



# ONNX Development Environment

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Chin Huang, Cognitive OpenTech

*Data and AI  
Open Source Dojo*

# Outline

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- ❖ ONNX
- ❖ ONNX Tensorflow Converter
  - ❖ Dependencies
    - ❖ ONNX
    - ❖ Tensorflow
  - ❖ Onnx-tf build
  - ❖ Quick verification

# Overview

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- The following instructions are to set up the development environment for the ONNX Tensorflow converter (<https://github.com/onnx/onnx-tensorflow>)
- We will go over the build process for the key converter dependencies ONNX and Tensorflow, but will not go into the development details for them, as additional details can be found, <https://github.com/onnx/onnx> and <https://github.com/tensorflow/tensorflow>, respectively.

# ONNX

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## ONNX dependencies

- Python3: The following instructions assume `python --V` returns python 3.6.x. The recommendation is to use virtualenv as the system build-in python3 is somewhat broken and needs additional patch work. If you have python3 instead of python, run `'sudo ln -sf /usr/bin/python3.6 /usr/bin/python'`
- git
- cmake (sudo apt install cmake)
- protobuf-compiler libprotoc-dev (sudo apt install protobuf-compiler libprotoc-dev)

# ONNX

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## Build from source

- git clone <https://github.com/onnx/onnx.git>
- cd onnx
- git submodule update --init --recursive
- python setup.py install

## Verification and test

- python -c "import onnx"
- pip install pytest nbval
- pytest

# Tensorflow

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## Use the stable 2.x release

- The Tensorflow master can be built manually but we use the latest release for stability
- `pip install -U tensorflow`
- `pip install -U tensorflow-addons`
- Now Tensorflow 2.x stable release is ready

## Verification and test

- `python`
- `>>> import tensorflow as tf` (uninstall and reinstall protobuf if you see `ModuleNotFoundError: No module named 'google.protobuf'`)
- `>>> tf.__version__` returns '2.1.0'
- `>>> tf.add(1, 2).numpy()` returns 3

# ONNX-Tensorflow

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## ONNX-Tensorflow dependencies

- Python3 (same as slide 4)
- ONNX (source build from master)
- Tensorflow (latest stable 2.x release)

## Build from source

- `git clone https://github.com/onnx/onnx-tensorflow.git`
- `cd onnx-tensorflow`
- `pip install -e .`

# ONNX-Tensorflow

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## Verification and test

- `python -c "import onnx_tf"`
- `python test/backend/test_model.py` (quickly run the model test)
- `python util/get_version.py` (should see something below)

```
Python version:  
3.6.9 (default, Nov  7 2019, 10:44:02)  
[GCC 8.3.0]  
ONNX version:  
1.7.0  
ONNX-TF version:  
1.5.0  
Tensorflow version:  
2.1.0
```



# ONNX-Tensorflow

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## Additional setup for code format and analysis

- Format code with yapf
  - `pip install yapf`
  - `yapf -ri --style="{based_on_style: google, indent_width: 2}" $FilePath$`
- Use pylint to check and analyze python code
  - `pip install pylint`
  - `wget -O /tmp/pylintrc https://raw.githubusercontent.com/tensorflow/tensorflow/master/tensorflow/tools/ci\_build/pylintrc`
  - `pylint --rcfile=/tmp/pylintrc myfile.py $FilePath$`