Implementing Deep Learning Models Using TensorFlow and Keras

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Overview

An overview of TensorFlow and Keras

Build models with TensorFlow on Databricks using MLflow

An Overview of TensorFlow and Keras

TensorFlow

Pioneering library for building deep learning models, first launched in November 2015. Free, open-source, and developed at Google.

TensorFlow 2.0

Major new version of TF, released in September 2019. Features several major improvements including support for dynamic computation graphs and ease-of-use. Not backward-compatible with TF1.x.

Keras

A simple. consistent, and intuitive API built on top of TensorFlow 2.0. Extremely easy to use, well documented, and provides clear and actionable messages.

Keras

A central part of the tightly-connected TensorFlow 2.0 ecosystem, covering every part of the machine learning workflow.

Keras

Simple and intuitive, reduces cognitive load on the developer

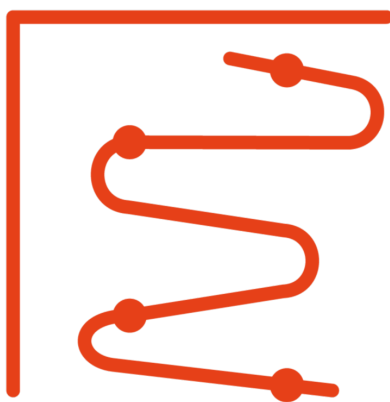**Follows principle of progressive disclosure of complexity**

- Simple workflows are easy and complex workflows are possible

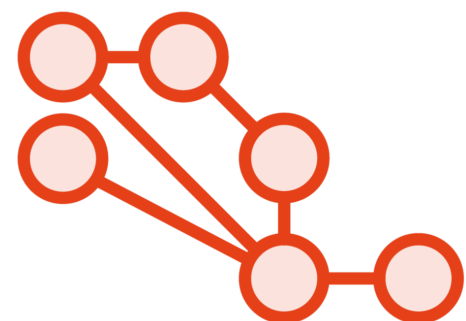**Provides industry-strength performance and scalability**

TensorFlow 2.0 and Keras

Efficient execution of low-level tensor operations on CPU, GPU, or TPU

Compute gradients of arbitrarily differentiable expressions

Scale computations to clusters of devices

Export graphs to external runtimes such as servers, browsers, mobile, and embedded devices

Demo

Building and training a TensorFlow regression model using MLflow on Databricks

Demo

Build and train a TensorFlow regression model

Use Bamboolib for data analysis and processing

Register and serve the model

Perform batch inferencing on data

Summary

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Up Next:
Implementing Deep Learning Models
Using PyTorch