

Introduction to Keras

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Deep Learning Libraries

- Artificial neural network is the core of deep learning methodologies.
- Deep learning is supported by various libraries such as Theano, TensorFlow, Caffe, Mxnet etc.,
- Keras is one of the most powerful and easy to use python library, which is built on top of popular deep learning libraries like TensorFlow, Theano, etc., for creating deep learning models.

Deep Learning Libraries

- Keras runs on top of open source machine libraries like TensorFlow, Theano or Cognitive Toolkit (CNTK).
- Theano is a python library used for fast numerical computation tasks.
- TensorFlow is the most famous symbolic math library used for creating neural networks and deep learning models.
- TensorFlow is very flexible and the primary benefit is distributed computing.
- CNTK is deep learning framework developed by Microsoft. It uses libraries such as Python, C#, C++ or standalone machine learning toolkits.
- Theano and TensorFlow are very powerful libraries but difficult to understand for creating neural networks.

Keras

- Keras is based on minimal structure that provides a clean and easy way to create deep learning models based on TensorFlow or Theano.
- Keras is designed to quickly define deep learning models. Well, Keras is an optimal choice for deep learning applications.

Keras : Features

- Keras leverages various optimization techniques to make high level neural network API easier and more performant. It supports the following features –
 - Consistent, simple and extensible API.
 - Minimal structure - easy to achieve the result without any frills.
 - It supports multiple platforms and backends.
 - It is user friendly framework which runs on both CPU and GPU.
 - Highly scalability of computation.

Keras : Benefits

- Keras is highly powerful and dynamic framework and comes up with the following advantages –
 - Larger community support.
 - Easy to test.
 - Keras neural networks are written in Python which makes things simpler.
 - Keras supports both convolution and recurrent networks.
 - Deep learning models are discrete components, so that, you can combine into many ways.

Keras : official website

- Keras is the most used deep learning framework among top-5 winning teams on Kaggle.
- Because Keras makes it easier to run new experiments, it empowers you to try more ideas than your competition, faster. And this is how you win.

<https://keras.io>

Keras : installation

- !pip install keras -U
- !pip install TensorFlow -U

Thank you

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