

Top 12

Artificial Intelligence Tools & Frameworks You Need to Know

40 days of
Artificial Intelligence

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Day #7

This series is free of charge and is available to everyone.

List of AI Tools & Frameworks

From the dawn of mankind, we as a species have always been trying to make things to assist us in day to day tasks. From stone tools to modern day machinery, to tools for making the development of programs to assist us in day to day life. Some of the most important tools and frameworks are:

1- Scikit Learn

been trying to make things to assist us in day to day tasks.



Scikit-learn is one of the most well-known ML libraries. It underpins many administered and unsupervised learning calculations. Precedents incorporate direct and calculated relapses, choice trees, bunching, k-implies, etc.

- It expands on two essential libraries of Python, NumPy and SciPy.

- It includes a lot of calculations for regular AI and data mining assignments, including bunching, relapse and order. Indeed, even undertakings like changing information, feature determination and ensemble techniques can be executed in a couple of lines.
- For a fledgeling in ML, Scikit-learn is a more than adequate instrument to work with, until you begin actualizing progressively complex calculations.

2- TensorFlow



On the off chance that you are in the realm of Artificial Intelligence, you have most likely found out about, attempted or executed some type of profound learning calculation. Is it accurate to say that they are essential? Not constantly. Is it accurate to say that they are cool when done right? Truly!

The fascinating thing about Tensorflow is that when you compose a program in Python, you can arrange and keep running on either your CPU or GPU. So you don't need to compose at the C++ or CUDA level to keep running on GPUs.

It utilizes an arrangement of multi-layered hubs that enables you to rapidly set up, train, and send counterfeit neural systems with huge datasets. This is the thing that enables Google to recognize questions in photographs or comprehend verbally expressed words in its voice-acknowledgment application.

3- Theano

The logo for Theano, featuring the word "theano" in a blue, lowercase, sans-serif font. The letter 't' is slightly larger and more prominent than the others.

Theano is wonderfully folded over Keras, an abnormal state neural systems library, that runs nearly in parallel with the Theano library. Keras' fundamental favorable position is that it is a moderate Python library for profound discovering that can keep running over Theano or TensorFlow.

It was created to make actualizing profound learning models as quick and simple as feasible for innovative work.

It keeps running on Python 2.7 or 3.5 and can consistently execute on GPUs and CPUs.

What sets Theano separated is that it exploits the PC's GPU. This enables it to make information escalated counts up to multiple times quicker than when kept running on the CPU alone. Theano's speed makes it particularly profitable for profound learning and other computationally complex undertakings.

4- Caffe

Caffe

'Caffe' is a profound learning structure made with articulation, speed, and measured quality as a top priority. It is created by the Berkeley Vision and Learning Center (BVLC) and by network donors. Google's

DeepDream depends on Caffe Framework.

This structure is a BSD-authorized C++ library with Python Interface.

5- MxNet



It allows for trading computation time for memory via 'forgetful backprop' which can be very useful for recurrent nets on very long sequences.

- Built with scalability in mind (fairly easy-to-use support for multi-GPU and multi-machine training).
- Lots of cool features, like easily writing custom layers in high-level languages
- Unlike almost all other major frameworks, it is not directly governed by a major corporation which is a healthy situation for an opensource, community developed framework.

- TVM support, which will further improve deployment support, and allow running on a whole host of new device types

6- Keras



If you like the Python-way of doing things, Keras is for you. It is a high-level library for neural networks, using TensorFlow or Theano as its backend.

The majority of practical problems are more like:

- picking an architecture suitable for a problem,
- for image recognition problems – using weights trained on ImageNet,
- configuring a network to optimize the results (a long, iterative process).

In all of these, Keras is a gem. Also, it offers an abstract structure which can be easily converted to other frameworks, if needed (for compatibility, performance or anything).

7- PyTorch



PyTorch is an AI system created by Facebook. Its code is accessible on GitHub and at the present time has more than 22k stars. It has been picking up a great deal of energy since 2017 and is in a relentless reception development.

8- CNTK

CNTK allows users to easily realize and combine popular model types such as feed-forward DNNs, convolutional nets (CNNs), and recurrent networks (RNNs/LSTMs). It implements stochastic gradient descent (SGD, error backpropagation) learning with automatic differentiation and parallelization across multiple GPUs and servers. CNTK is available for anyone to try out, under an open-source license.

11- H2O: Open Source AI Platform

H2O is an open-source deep learning platform. It is an artificial intelligence tool which is business oriented and help them to make a decision from data and enables the user to draw insights. There are two open source versions of it: one is standard H2O and other is paid version Sparkling Water. It can be used for predictive modelling, risk and fraud analysis, insurance analytics, advertising technology, healthcare and customer intelligence.

12- Google ML Kit

Google ML Kit, Google's machine learning beta SDK for mobile developers, is designed to enable developers to build personalised features on Android and IOS phones.



The kit allows developers to embed machine learning technologies with app-based APIs running on the device or in the cloud. These include features such as face and text recognition, barcode scanning, image labelling and more.

9- Auto ML



Out of all the tools and libraries listed above, Auto ML is probably one of the strongest and a fairly recent addition to the arsenal of tools available at the disposal of a machine learning engineer.

As described in the introduction, optimizations are of the essence in machine learning tasks. While the benefits reaped out of them are lucrative, success in determining optimal hyperparameters is no easy task.

This is especially true in the black box like neural networks wherein determining things that matter becomes more and more difficult as the depth of the network increases.

Thus we enter a new realm of meta, wherein software helps up build software. AutoML is a library which is used by many Machine learning engineers to optimize their models.

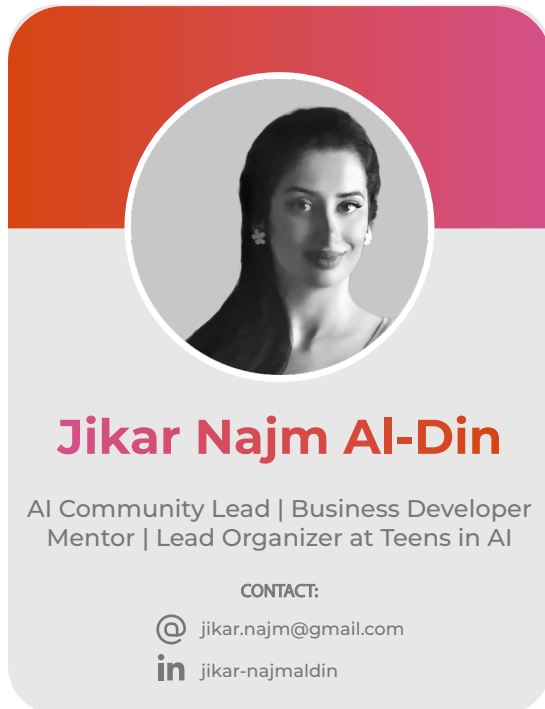
Apart from the obvious time saved, this can also be extremely useful for someone who doesn't have a lot of experience in the field of machine learning and thus lacks the intuition or past experience to make certain hyperparameter changes by themselves.

10- OpenNN

Jumping from something that is completely beginner friendly to something meant for experienced developers, OpenNN offers an arsenal of advanced analytics.

It features a tool, Neural Designer for advanced analytics which provides graphs and tables to interpret data entries.

Developers are also able to build their own TensorFlow Lite models in cases where the built-in APIs may not suit the use case. ones.



What are your thoughts?
Share your opinions in the
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