

Installing Anaconda

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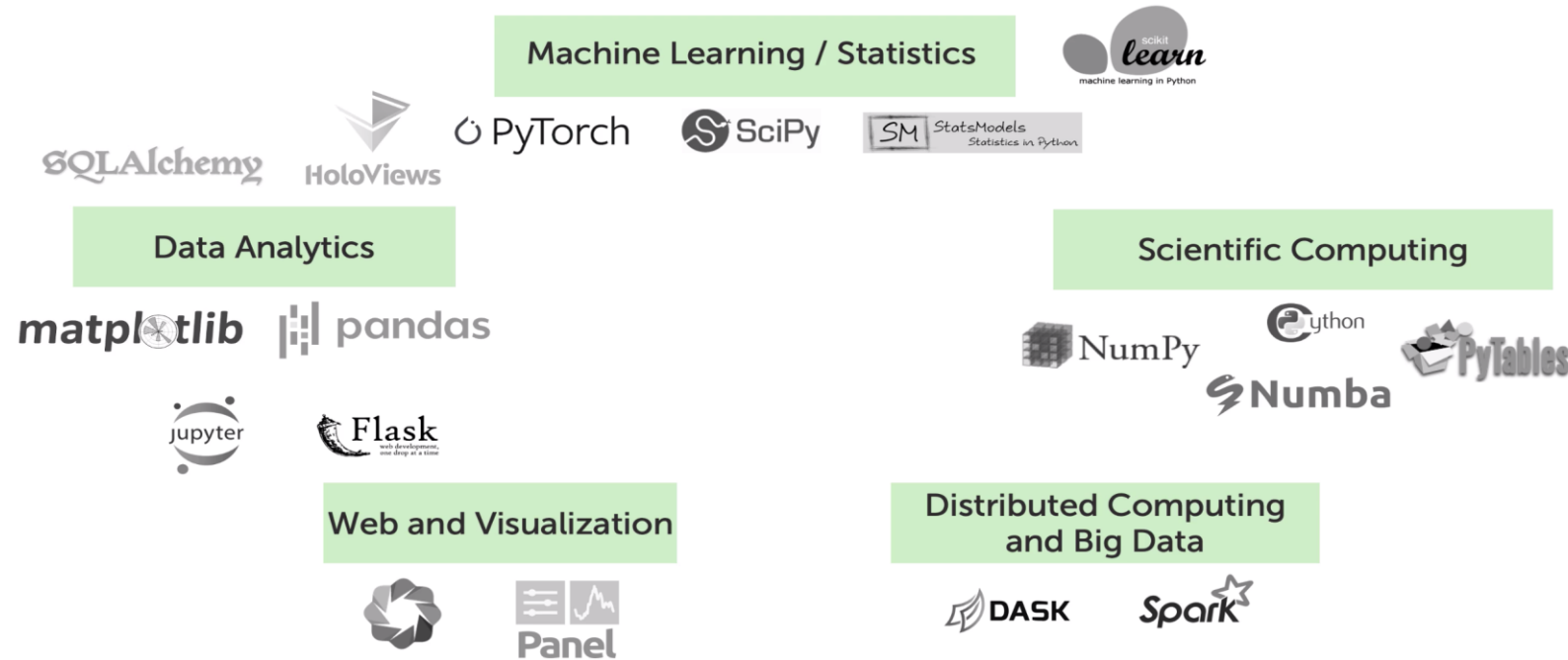
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What is Anaconda?

- ✓ Anaconda is a free and open-source **distribution** of the Python and R programming languages for scientific computing (data science, machine learning applications, large-scale data processing, predictive analytics, etc.), that aims to **simplify** package management and deployment.
- ✓ The distribution includes data-science packages suitable for **Windows, Linux, and macOS**.
- ✓ As an Anaconda, Inc. product, it is also known as Anaconda Distribution or **Anaconda Individual Edition**, while other products from the company are Anaconda **Team** Edition and Anaconda **Enterprise** Edition, which are both **not free**.
- ✓ Anaconda installs IDEs and several important **packages** like NumPy, Pandas, and so on, and this is a really convenient package which can be downloaded and installed.
- ✓ Anaconda distribution comes with **1500** packages selected from **PyPI** as well as the **conda** package and virtual environment manager. It also includes a GUI, **Anaconda Navigator**, as a graphical alternative to the command line interface (CLI)

Data science is Complicated



So we need a package system which has all the important packages **pre-installed** so that we can start working from the word go, which is why we need package distribution system like Anaconda.

Anaconda provides an efficient way to **install**, **upgrade** and **run** these packages

Anaconda Distributions



Individual Edition

Our distribution of Python for data science is ideal for solo practitioners, researchers, and students working on their own.

[Learn More](#) 



Team Edition

Thousands of curated data science packages in an enterprise-grade repository. Ideal as you scale the use of Python and R across the data science discipline.

[Learn More](#) 



Enterprise Edition

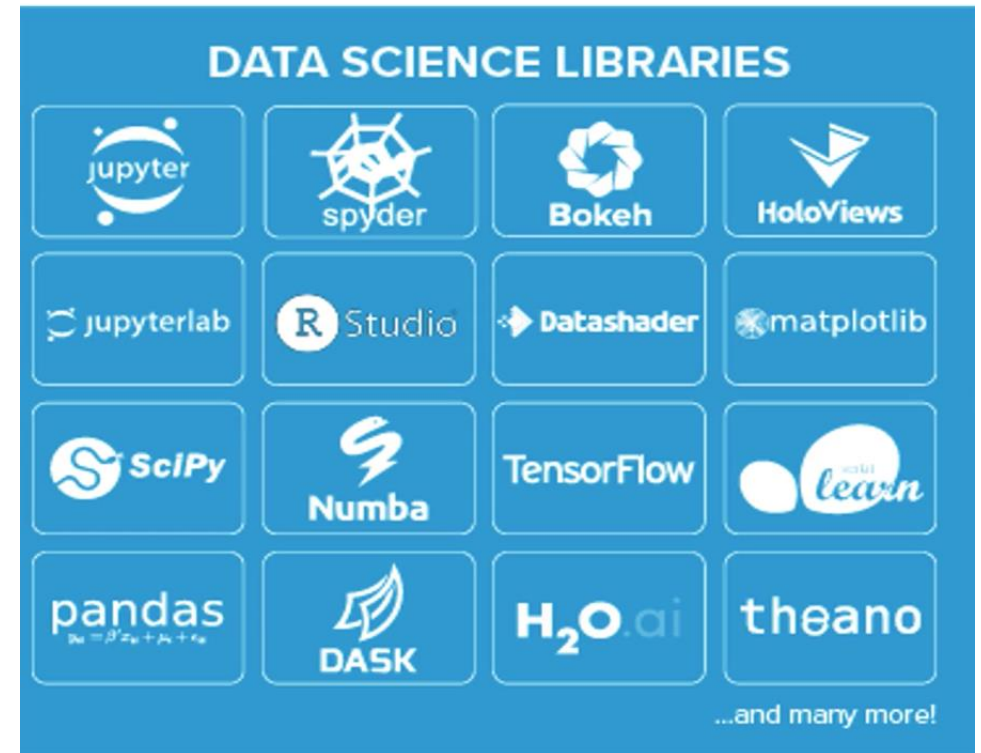
Our enterprise platform is a comprehensive foundation for any organization that wants to use data science and machine learning to make better decisions and build differentiating products.

[Learn More](#) 

We will use Individual Anaconda Edition for this course

Anaconda Individual Distribution

- ✓ Thousands of curated libraries for
 - ✓ Analysis
 - ✓ Visualization
 - ✓ Modelling
- ✓ Supports Mac OS, Windows and Linux
 - ✓ 200+ packages pre-installed
 - ✓ It **just works** out of the box



Anaconda Installers

Windows

Python 3.7

64-Bit Graphical Installer (466 MB)

32-Bit Graphical Installer (423 MB)

Python 2.7

64-Bit Graphical Installer (413 MB)

32-Bit Graphical Installer (356 MB)

MacOS

Python 3.7

64-Bit Graphical Installer (442)

64-Bit Command Line Installer (430 MB)

Python 2.7

64-Bit Graphical Installer (637 MB)

64-Bit Command Line Installer (409 MB)

Linux

Python 3.7

64-Bit (x86) Installer (522 MB)

64-Bit (Power8 and Power9) Installer (276 MB)

Python 2.7

64-Bit (x86) Installer (477 MB)

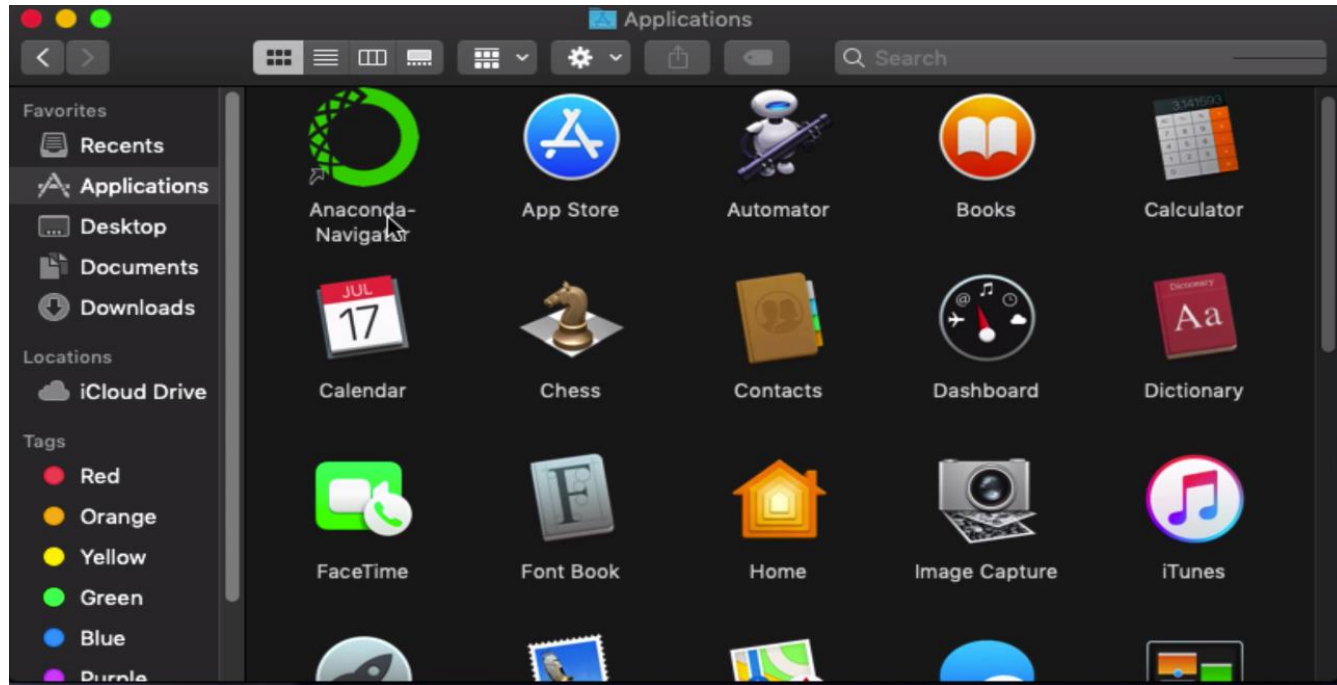
64-Bit (Power8 and Power9) Installer (295 MB)

As you can see, Anaconda distribution is available for all major operating systems

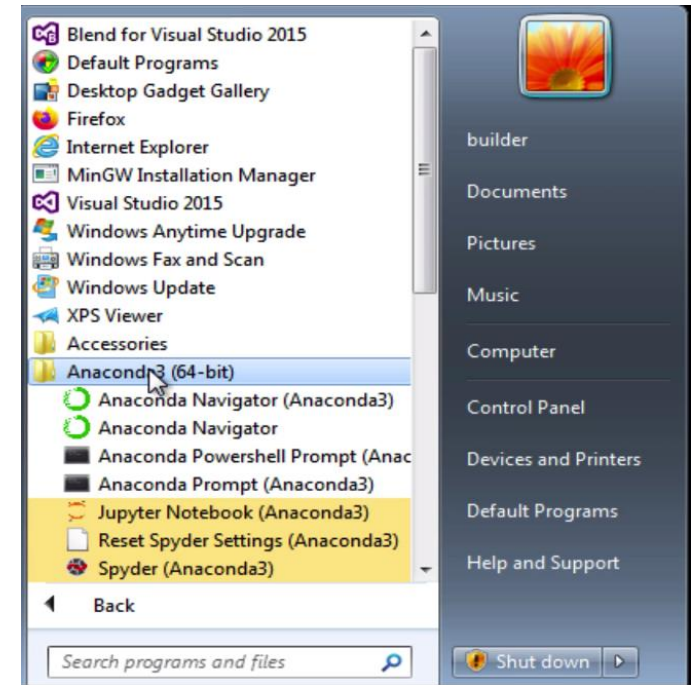
Steps for Installation

- ✓ **Step 1:** You can download the the installer from here or from this [link](#) (Click on **download** button)
- ✓ **Step 2:** Select the operating system you are on (Refer to the previous slide).
- ✓ **Step 3:** From the Python **3.6** section, choose from 32bit / 64bit options. The download should start after this. It's a pretty large file, so it might take some time to download.
 - ✓ **Note:** Anaconda comes with Python so you need not install Python separately
- ✓ **Step 4:** Go through the installation procedure with the installer.
- ✓ **Step 5:** After the installation is complete, search for **Anaconda Navigator** in the Start menu or from terminal give the following command **anaconda-navigator** which starts the navigator so that you can start working with your favourite packages right away.

Launching Anaconda Navigator

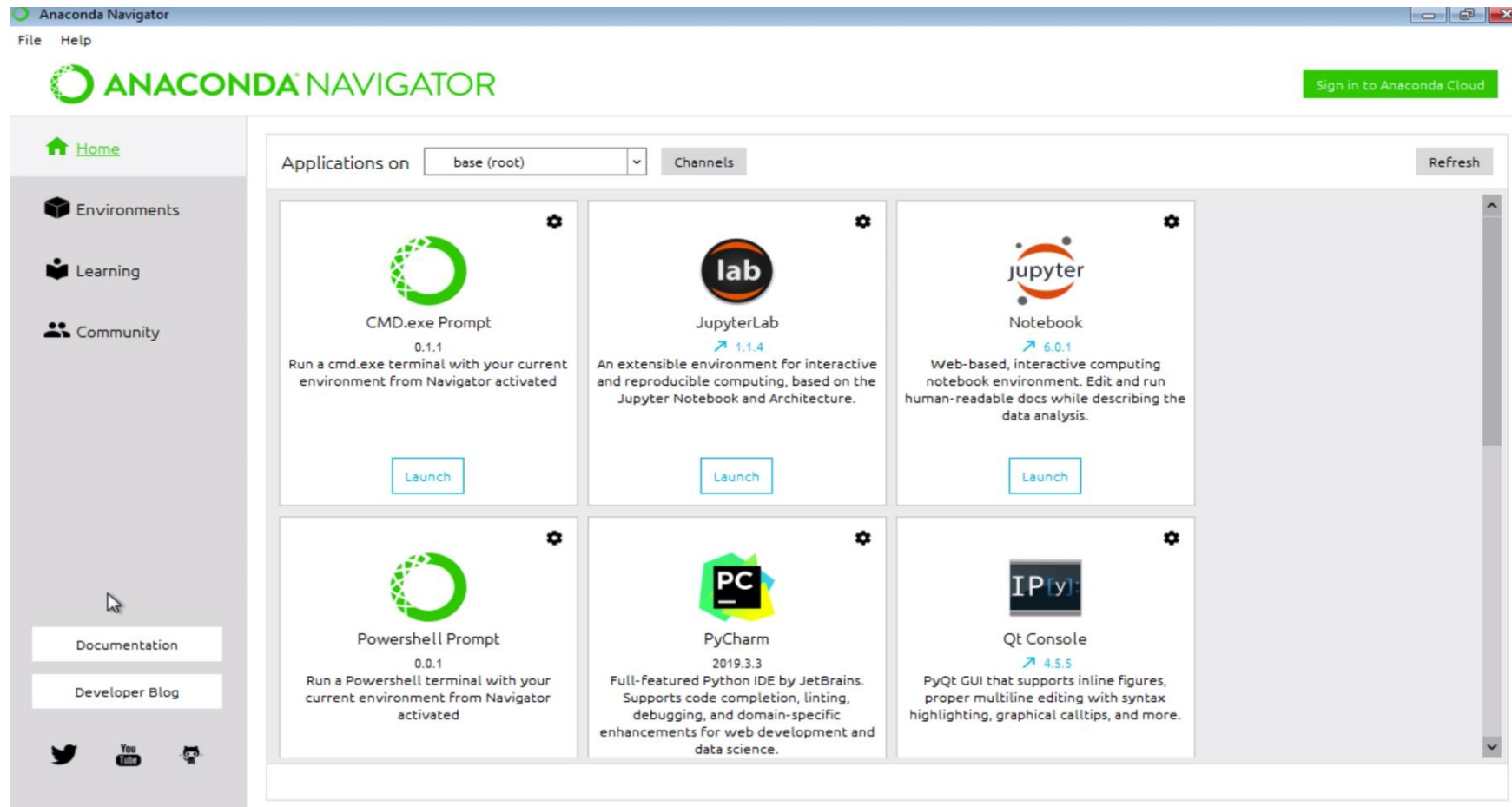


Mac OS



Windows

Anaconda Navigator



Start any application using **Launch** button

Using Navigator

- ✓ **Home tab:** Provides application tiles to launch terminal window, Jupyter and IDE's. You can Launch any application by simply clicking on Launch button
- ✓ **Environments:** We can explore list of available packages which are pre-installed while installing Anaconda. You can use the search bar to know whether the package you want is already installed.
 - ✓ We can also create new environments to hold our package groups, more on this later

Preinstalled packages

As you can at the bottom we have 330 packages pre-installed with Anaconda to head start our Machine learning project

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Search Environments

anaconda3

keras_env

miniconda3

streamlit

ztdl

Installed

Channels

Update index...

Search Packages

Name	T	Description	Version
✓ _ipyw_jlab_nb_ex...	○		0.1.0
✓ _tflow_select	○		2.2.0
✓ abst-py	○		0.7.0
✓ alabaster	○	Configurable, python 2+3 compatible sphinx theme	0.7.10
✓ algorithmia	○		1.1.3
✓ altair	○		4.0.1
✓ anaconda	○		custom
✓ anaconda-client	○	Anaconda.org command line client library	1.6.5
✓ anaconda-project	○	Reproducible, executable project directories	0.8.0
✓ appdirs	○	Python module for determining appropriate platform-specific dirs	1.4.3
✓ appnope	○	Disable app nap on os x 10.9	0.1.0
✓ appscript	○	Control applescriptable applications from python	1.0.1
✓ asn1crypto	○	Asn.1 parser and serializer	0.22.0
✓ astor	○		0.7.1

330 packages available

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Update index...

pandas

Name	T	Description	Version
✓ blaze	○	Numpy and pandas interface to big data	0.11.3
✓ pandas	○	Powerful python data analysis toolkit	0.20.3

2 packages available matching "pandas"

Search for packages

Conda package manager

- ✓ Install, remove and update packages
- ✓ Automatically installs dependencies
 - ✓ At the correctly matched versions
- ✓ Install packages written in any programming language (Not just for Python and R)
- ✓ No compilers needed to install packages
- ✓ Works on Mac, Linux and Windows



Conda Environment

- ✓ Keep multiple versions (of the same package) installed
- ✓ Each conda environment is independent of each other, Think of them as separate Python installations
- ✓ Packages can be installed/upgraded/downgraded
 - ✓ Using conda
 - ✓ Using pip
- ✓ Directly from Anaconda Navigator

Installing new packages through Anaconda Navigator

The screenshot shows the Anaconda Navigator interface. On the left sidebar, the 'Home' tab is selected. The main panel displays the 'Not installed' tab, showing a list of available packages. The search bar at the top right contains the text 'Search Packages'. The list of packages includes:

Name	Description	Version
2dfatmlc		1.0
4t2		1.6.9
_anaconda_depe...		2020.02
_go_select		2.3.0
_libarchive_stati...		3.3.3
_libgcc_mutex		0.1
_low_priority		1.0
_mutex_mxnet		0.0.40
_nb_ext_conf		0.4.0
_py-xgboost-mutex		2.0
_pytorch_select		0.1
_r-mutex		1.0.1
_r-xgboost-mutex		2.0
_tflow_1100_select		0.0.2

At the bottom of the list, it says '15150 packages available'. The left sidebar also shows a list of environments: 'anaconda3', 'keras_env', 'miniconda3', 'streamlit', and 'ztdl'.

The screenshot shows the Anaconda Navigator interface with the search bar at the top right containing the text 'pytorch'. The main panel displays the search results for 'pytorch'. The list of packages includes:

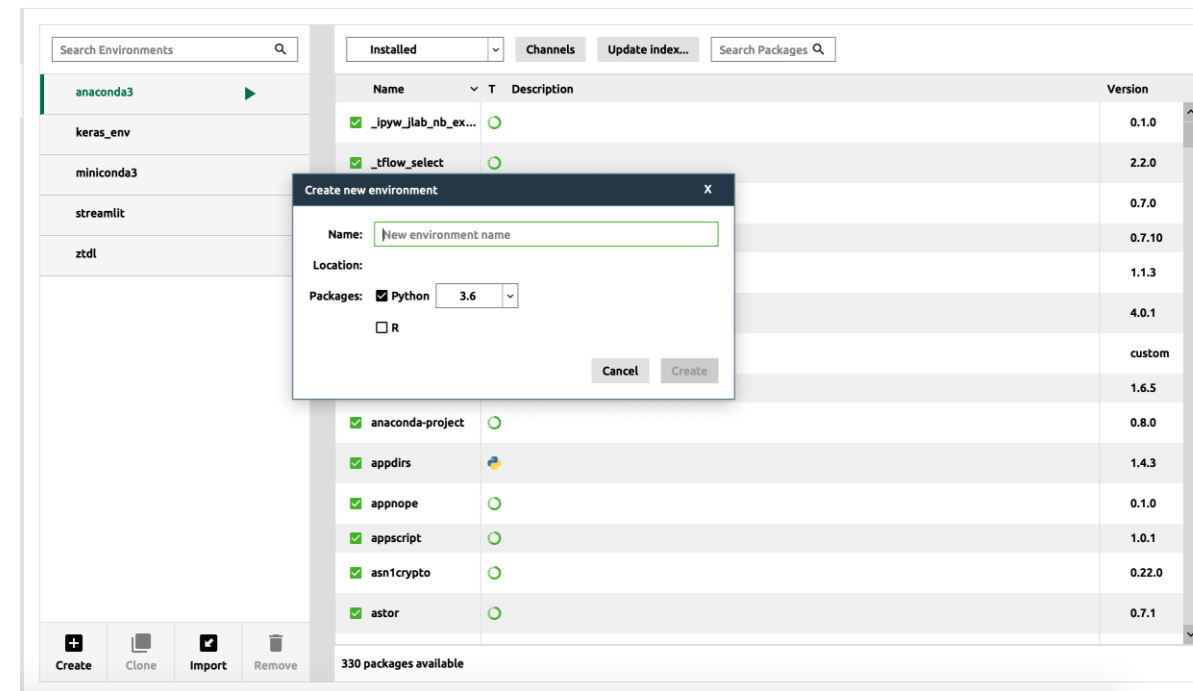
Name	Description	Version
_pytorch_select		0.1
gpytorch		1.0.1
pytorch		1.4.0
pytorch-cpu		1.1.0
sagemaker-pytorch-container		2.0.0
sagemaker-pytorch-serving-container		1.4.3

At the bottom of the list, it says '6 packages available matching "pytorch"'. The left sidebar also shows a list of environments: 'anaconda3', 'keras_env', 'miniconda3', 'streamlit', and 'ztdl'.

Select the Not installed option and search for package that you are looking for and click on install

Create a new Anaconda environment

- ✓ Very important when you are working on **multiple** applications/projects at the same time
- ✓ Gives a **non conflicting** environment to work on a particular project
- ✓ Click on create button on the bottom to create a new Environment
- ✓ Select the python or R version you want and click on Create button in the pop over



Click on Create to create a new environment

Anaconda in Enterprise

Team Edition

*The only enterprise repository
designed for data science*

Team Edition consists of a repository of over 7,500 data science and machine learning packages curated by Conda experts for security and reliability, mirrored on your enterprise infrastructure.

www.anaconda.com/repository

Enterprise Edition

*A full-featured platform for the
machine learning life cycle*

Anaconda Enterprise empowers data science at speed and scale by enabling organizations to deploy AI and machine learning projects into production to move businesses forward.

www.anaconda.com/enterprise

Some packages we are discussing in this course...

- ✓ Numpy
- ✓ Pandas
- ✓ Matplotlib
- ✓ Seaborn
- ✓ Scikit-learn (For Machine learning)
- ✓ Tensorflow (For deep learning)
- ✓ Keras (For deep learning)

Note: Most of these libraries will be **pre-installed** through Anaconda installation, we will install others when we discuss them. Also we will practice on **Google colab** which has everything pre-installed.

References and further reading

- <https://hackernoon.com/installing-python-and-anaconda-on-windows-f9059ba8b136>
- <https://www.anaconda.com/products/individual>
- [https://en.wikipedia.org/wiki/Anaconda \(Python distribution\)](https://en.wikipedia.org/wiki/Anaconda_(Python_distribution))

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