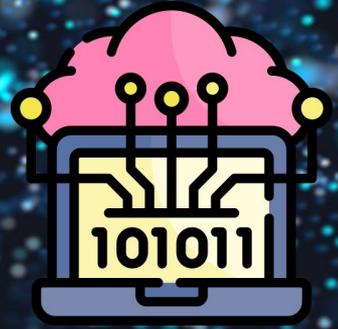


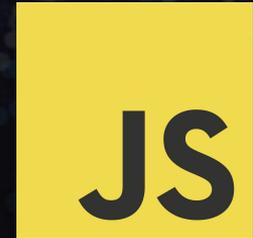
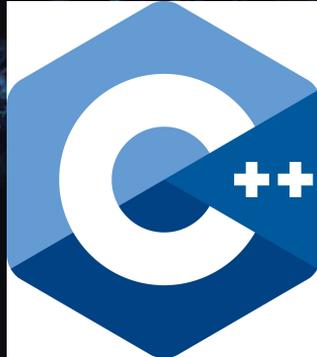
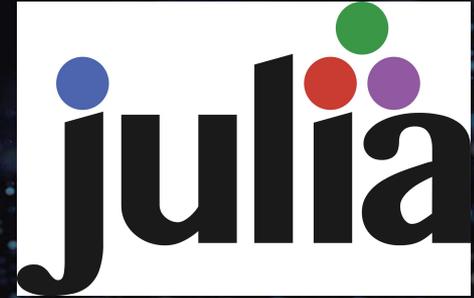
Machine Learning: Lenguajes y Librerías (2024)



Lenguajes de Programación



Python!



Javascript

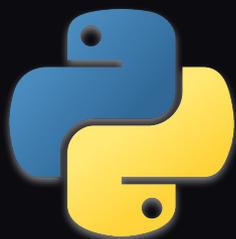
Lenguajes de Programación

Lenguaje	Investigación	Análisis de Datos	Desarrollo de Sistemas	Librerías de Base	Alto Desempeño	Popularidad
Python	✓	✓	✓	✓		✓
R	✓	✓				✓
Julia	✓	✓			✓	
C++	✓			✓	✓	
Javascript			✓			✓
Java			✓		✓	

Plataformas



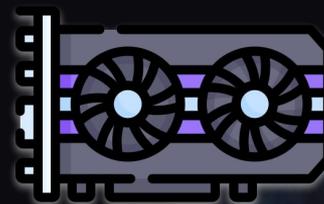
VsCode /
otro IDE



Python + pip



Entorno Local



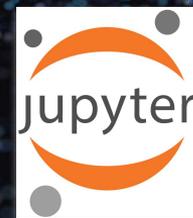
Sesiones de
Cómputo
Acelerado



Python con
paquetes
preinstalados



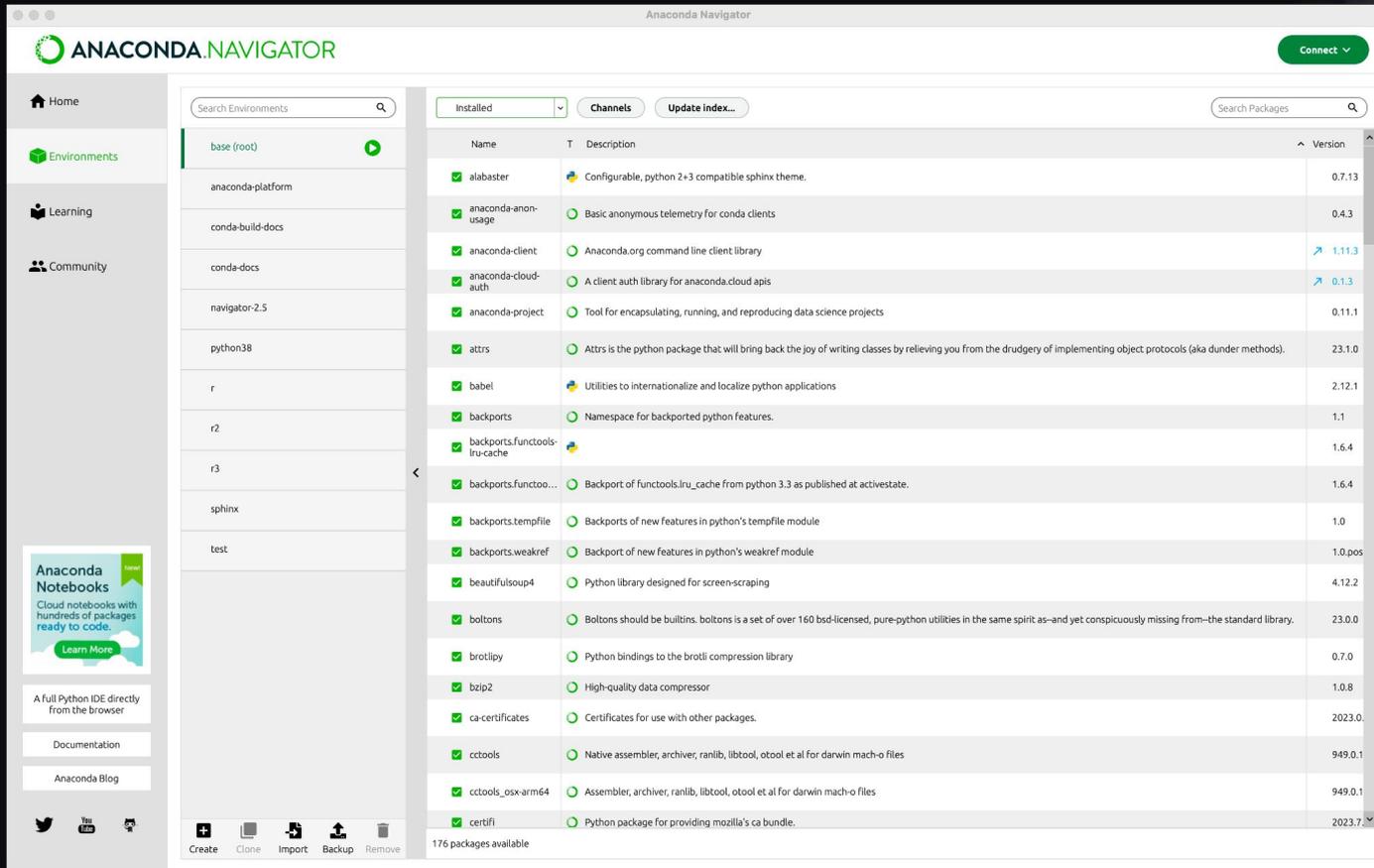
Datos en
la nube



Interfaz web
basada en
Jupyter

Google Colab / Kaggle /
Amazon SageMaker

Anaconda Python (local)



The screenshot displays the Anaconda Navigator application window. The interface is divided into several sections:

- Header:** "ANACONDA.NAVIGATOR" logo and a "Connect" button.
- Left Sidebar:** Navigation menu with "Home", "Environments", "Learning", and "Community". A "Create" button is at the bottom.
- Environment List:** A list of environments including "base (root)", "anaconda-platform", "conda-build-docs", "conda-docs", "navigator-2.5", "python38", "r", "r2", "r3", "sphinx", and "test".
- Package List:** A table of installed packages with columns for Name, Description, and Version.
- Bottom Bar:** Action buttons: "Create", "Clone", "Import", "Backup", and "Remove".

Name	Description	Version
alabaster	Configurable, python 2+3 compatible sphinx theme.	0.7.13
anaconda-anon-usage	Basic anonymous telemetry for conda clients	0.4.3
anaconda-client	Anaconda.org command line client library	1.11.3
anaconda-cloud-auth	A client auth library for anaconda.cloud apis	0.1.3
anaconda-project	Tool for encapsulating, running, and reproducing data science projects	0.11.1
attrs	Attrs is the python package that will bring back the joy of writing classes by relieving you from the drudgery of implementing object protocols (aka dunder methods).	23.1.0
babel	Utilities to internationalize and localize python applications	2.12.1
backports	Namespace for backported python features.	1.1
backports.functions-lru-cache		1.6.4
backports.functoo...	Backport of functools.lru_cache from python 3.3 as published at activestate.	1.6.4
backports.tempfile	Backports of new features in python's tempfile module	1.0
backports.weakref	Backport of new features in python's weakref module	1.0.post
beautifulsoup4	Python library designed for screen-scraping	4.12.2
boltons	Boltons should be builtins. boltons is a set of over 160 bsd-licensed, pure-python utilities in the same spirit as—and yet conspicuously missing from—the standard library.	23.0.0
brotlipy	Python bindings to the brotli compression library	0.7.0
bzip2	High-quality data compressor	1.0.8
ca-certificates	Certificates for use with other packages.	2023.0.
cctools	Native assembler, archiver, ranlib, libtool, otool et al for darwin mach-o files	949.0.1
cctools_osx-arm64	Assembler, archiver, ranlib, libtool, otool et al for darwin mach-o files	949.0.1
certifi	Python package for providing mozilla's ca bundle.	2023.7

176 packages available



IPython (Interactive Python)

- Terminal con autocompletar y otras facilidades

```
> ipython
Python 3.10.12 (main, Jul 29 2024, 16:56:48) [GCC 11.4.0]
Type 'copyright', 'credits' or 'license' for more information
IPython 8.24.0 -- An enhanced Interactive Python. Type '?' for help.

In [1]: import numpy as np
```

Jupyter Notebook

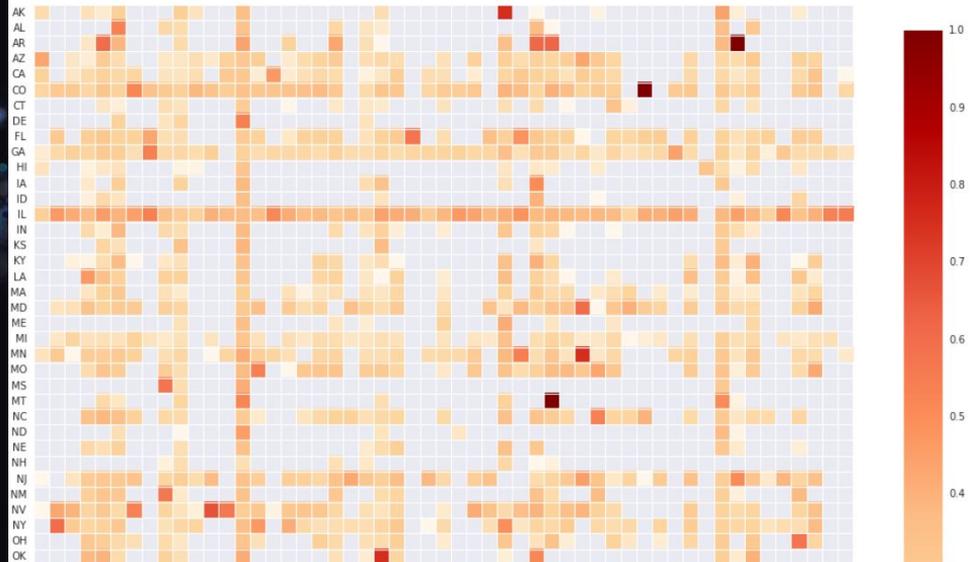
- Entorno de desarrollo integrado
- Texto
- Código
- Resultados

We can also see some other moderately hot spots, such as (AK → NJ) and (OK → MN), which seem to have a higher percentage of delays than other state pairs.

One "crosshair" jumps out in the visualization: the row and column representing Illinois are nearly both filled with non-gray cells. On closer inspection, we see Illinois sends flights to and receives flights from every other state except one: TT, the state code abbreviation for U.S. Pacific Trust Territories and Possessions. And though it is difficult to make accurate relative value judgments from this visualization, it appears the run of cells in the row and column for Illinois are darker than most other row or column runs (e.g., GA).

```
fig, ax = plt.subplots(figsize=(18,18))  
asymmatplot(mat, names=mat.columns, ax=ax, cmap='OrRd', cmap_range=(0., 1.0))
```

<matplotlib.axes._subplots.AxesSubplot at 0x7f679b051950>



Google Colab (Jupyter Notebook Custom)



YOLO Traffic.ipynb ☆

Archivo Editar Ver Insertar Entorno de ejecución Herramientas Ayuda [Se editó por última vez: 11 de julio](#)

+ Código + Texto

```
1 Comienza a programar o generar con IA.
```

```
1 !pip install ultralytics
2
3 import numpy as np
4 import cv2
5 from pathlib import Path
6
7 import ultralytics
8 ultralytics.checks()
9 from ultralytics import YOLO
10
```

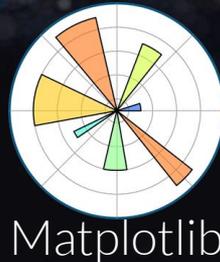
↔ Ultralytics YOLOv8.2.52 🚀 Python-3.10.12 torch-2.3.0+cu121 CPU (Intel Xeon 2.20GHz)
Setup complete ✅ (2 CPUs, 12.7 GB RAM, 31.0/107.7 GB disk)

Ecosistema Python

Herramientas



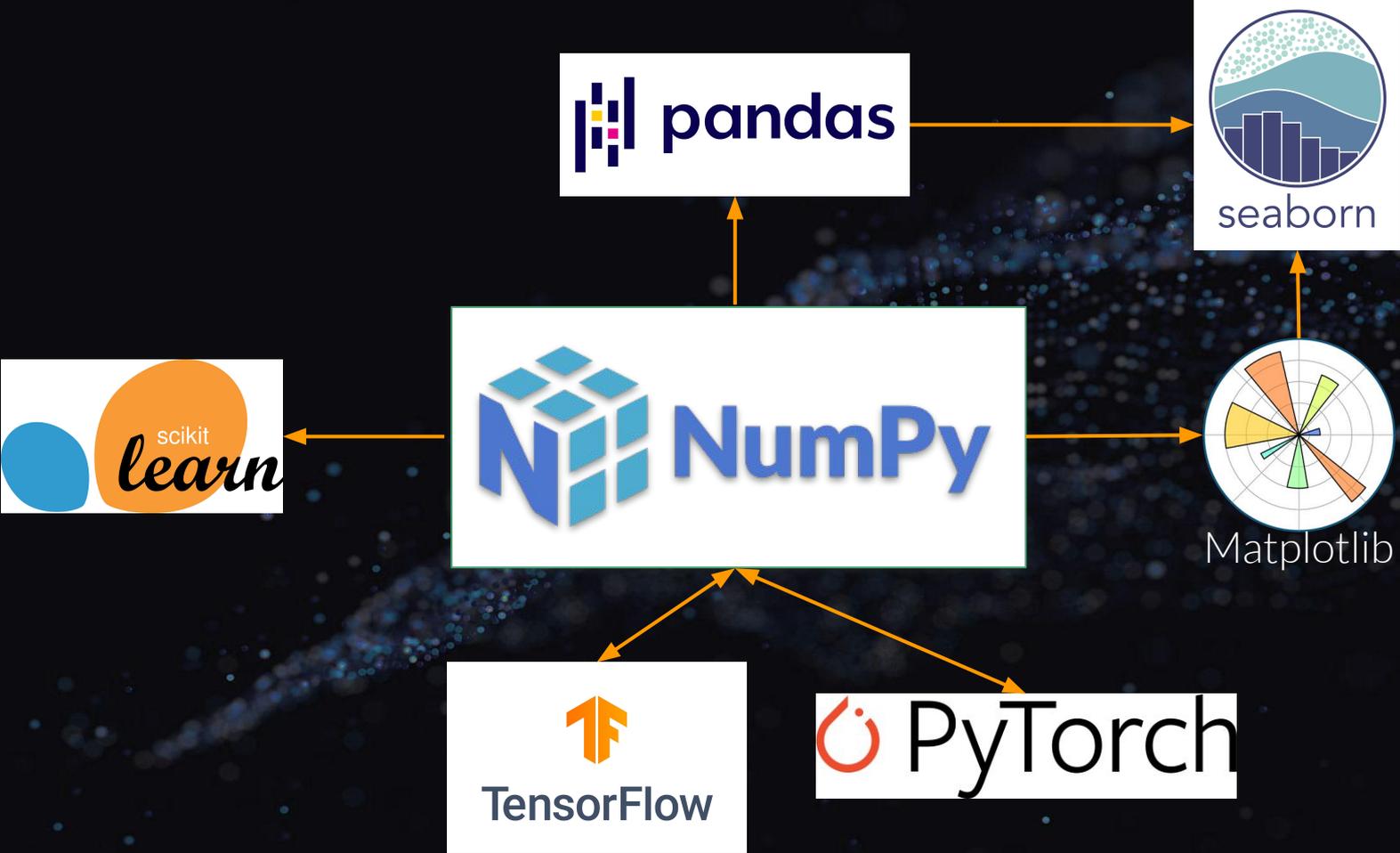
Librerías Bajo Nivel



Librerías Alto Nivel



Ecosistema Python





Ecosistema Python

Nombre	Tipo	Nivel	Objetivo
IPython	Intérprete	-	Probar programas de forma interactiva
Jupyter	IDE	-	Desarrollo simple con "Notebooks"
Numpy	Librería	Bajo	Álgebra Vectorial Acelerada
Pandas	Librería	Alto	Datos Tabulares
Matplotlib	Librería	Bajo	Visualización (primitivas)
Seaborn	Librería	Alto	Visualización (alto nivel)
Scikit-Learn	Librería	Alto	Machine Learning
PyTorch	Librería	Bajo/Medio	Numpy para DL + Modelos de DL
TensorFlow	Librería	Bajo/Medio	Numpy para DL
Keras	Librería	Alto	Modelos de DL para TensorFlow

Estrellas de Github de Frameworks (2024)

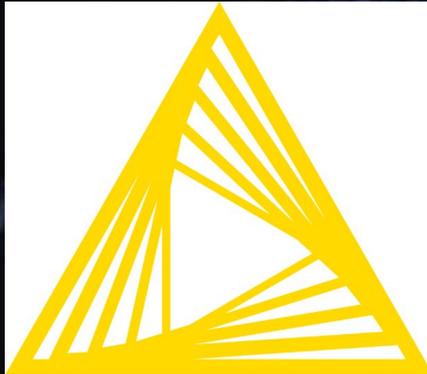


- ML tradicional
 - Scikit-learn: ★ 59k
- Deep Learning
 - Pytorch: ★ 86k
 - Keras: ★ 61k
 - Tensorflow: ★ 185k
 - Transformers (Hugging Face): ★ 130k
- Para comparar
 - Python: ★ 184k
 - React: ★ 227k

Plataformas sin código



ALTAIR

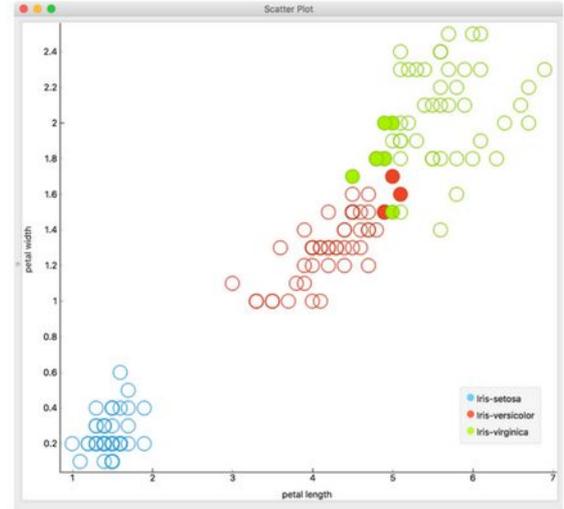
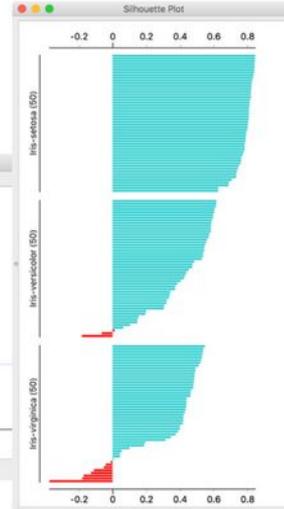
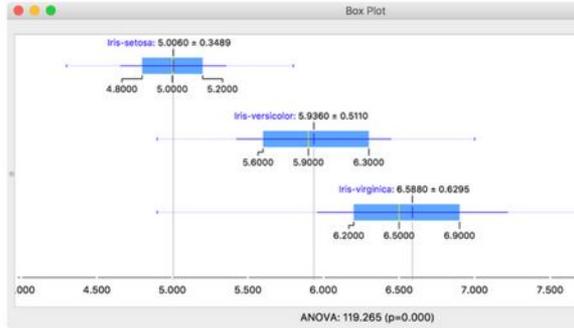
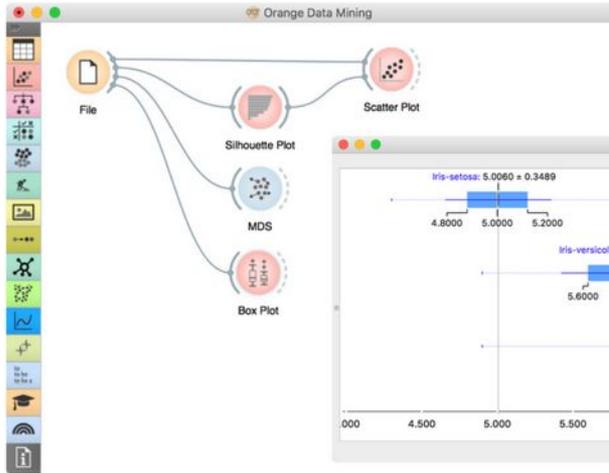


Open for Innovation

KNIME



Plataformas sin código



Plataformas sin código



The screenshot displays the KNIME software interface. On the left is a sidebar with various tool categories: IO, Manipulation, and Views. The main workspace shows a workflow with the following components:

- Excel Reader**: Read the first sheet ("Kitchen") of the rooms.xlsx file.
- Excel Reader**: Read the "Living Room" sheet of the rooms.xlsx file.
- Column Filter**: Exclude the comments from the "Living Room" sheet.
- Excel Reader**: Read the "Dictionary" sheet of the rooms.xlsx file.
- Column Merger**: Replace missing values in the "Dict-Volume" column with the values available in the "empty_0" column.
- String to Number**: Change "Dict-Volume" column from string to number.
- Concatenate**: Bring the items in the "Kitchen" and "Living Room" in one table.
- Value Lookup**: Append the volumes of the listed items based on their IDs.
- Bar Chart**: A Bar Chart with the amounts of single items in the freight.
- Row Aggregator**: 1st output port: Sum up volumes of the listed items. 2nd output port: Calculate the grand total volume of all items.

Below the workflow, a data table is shown with the following structure:

#	RowID	Item	Amount
1	Row0	Table	1