



ANTICIPARE LA CRESCITA CON LE NUOVE COMPETENZE SUI BIG DATA – EDIZIONE 2

Operazione Rif. PA 2019-11596/RER “Anticipare la crescita con le nuove competenze sui Big Data”, approvata dalla Regione Emilia-Romagna con DGR n° 789 del 20 maggio 2019 e co-finanziata dal Fondo Sociale Europeo PO 2014-2020



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA
CENTRO NAZIONALE DI RICERCA E INNOVAZIONE



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Data Scientist



What society thinks I do



What my friends think I do



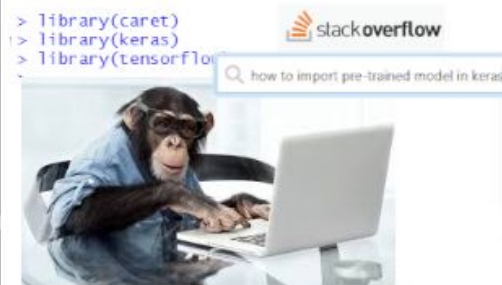
What my parents think I do



What my coworkers think I do



What I think I do



What I really do

Cosa fa un data scientist veramente?

- Persona curiosa che sa porsi domande sui dati e sa cercare le risposte
- Fa da tramite tra il dato e il business
- Traduce i dati in informazione
- Comunica i risultati a persone che non sono tecnici



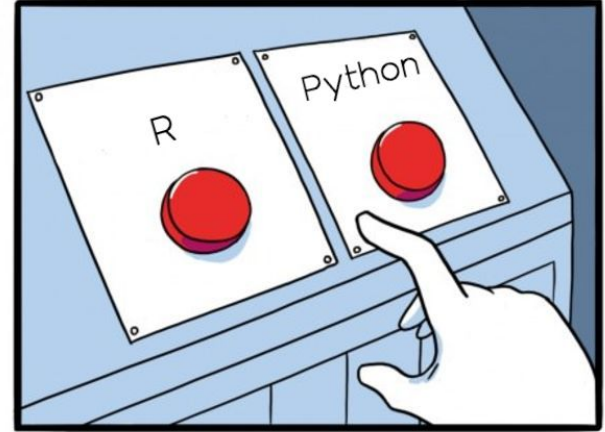
Junior Data Scientist



Required skills:
R, Python,
SQL, PostgreSQL,
Office, Jira,
PowerBI, Tableau,
Hadoop, Spark,
Splunk, Qlik, Git, CRM

Perché Python?

1. Sintassi semplice e chiara
2. Community molto attiva
3. Open Source
4. Grande varietà di librerie



JAKE-CLARK.TUMBLR

Python Tutorial

[Python HOME](#)[Python Intro](#)[Python Get Started](#)[Python Syntax](#)[Python Comments](#)[Python Variables](#)[Python Data Types](#)[Python Numbers](#)[Python Casting](#)[Python Strings](#)[Python Booleans](#)[Python Operators](#)[Python Lists](#)[Python Tuples](#)[Python Sets](#)[Python Dictionaries](#)[Python If...Else](#)[Python While Loops](#)[Python For Loops](#)[Python Functions](#)[Python Lambda](#)[Python Arrays](#)[Python Classes/Objects](#)

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Python Introduction

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What is Python?

Python is a popular programming language. It was created by Guido van Rossum, and released in 1991.

It is used for:

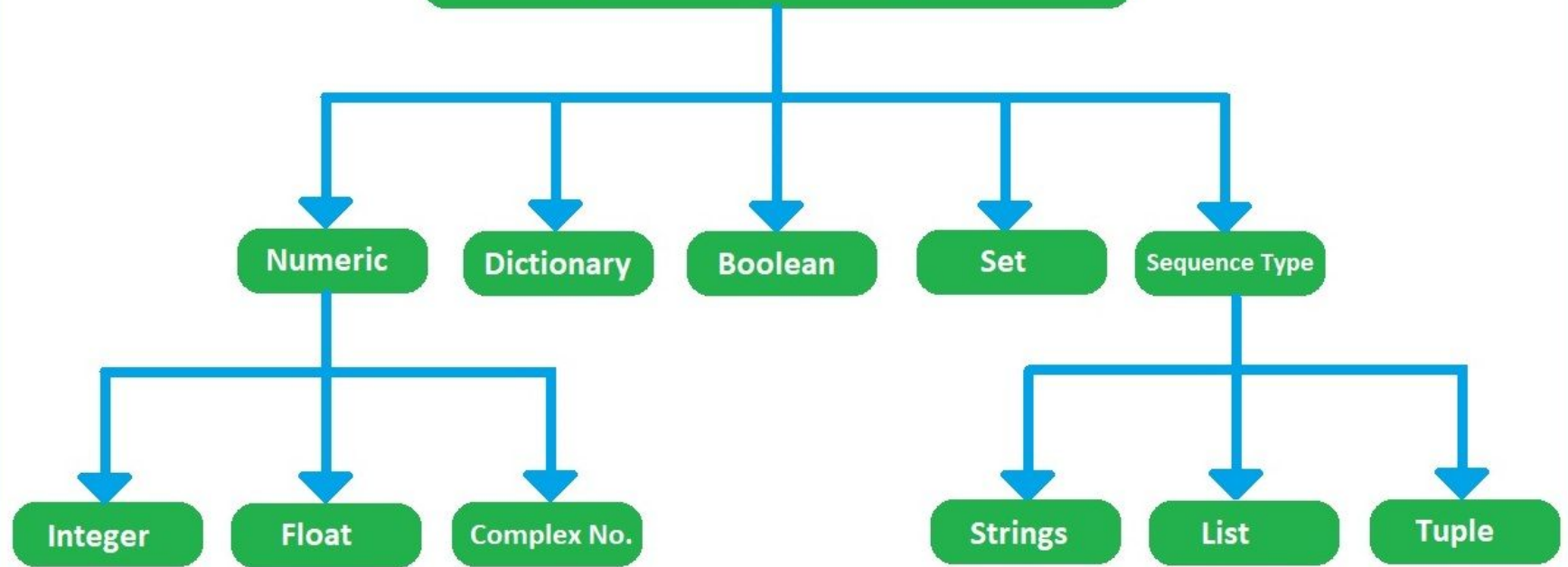
- web development (server-side),
- software development,
- mathematics,
- system scripting.

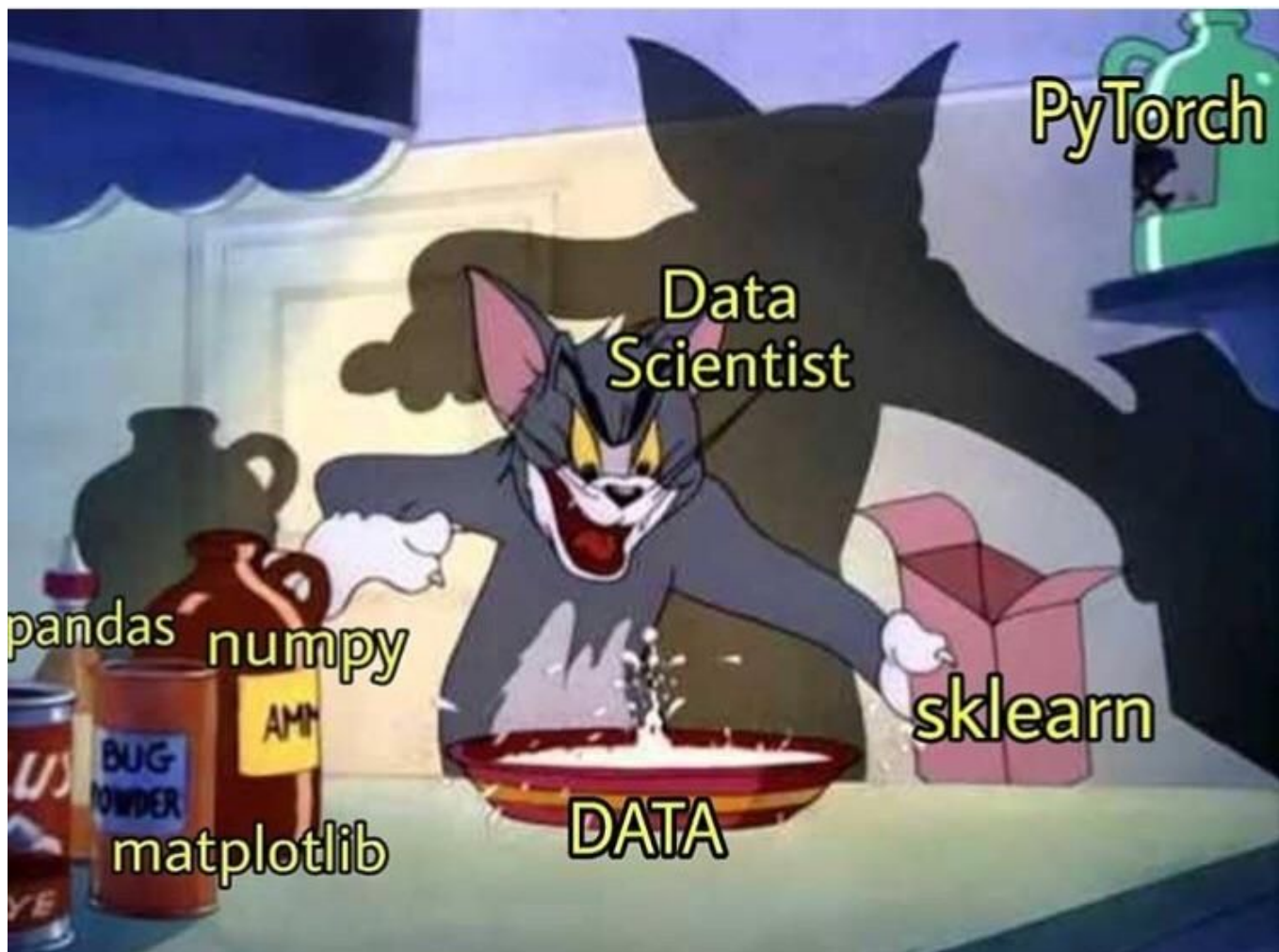
What can Python do?

- Python can be used on a server to create web applications.
- Python can be used alongside software to create workflows.
- Python can connect to database systems. It can also read and modify files.

[Python di W3Schools](#)

Python DataTypes





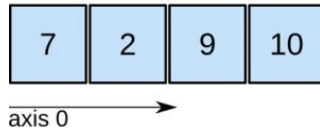
Programma della lezione

- Cos'è **NumPy**?
- Creare un Array
- Tipi di dati
- Indicizzazione
- Slicing
- View e Copy
- Shape e Reshape
- Iterare gli Array
- Filtrare
- Operazioni matematiche
- Classe Random
- Funzioni universali

Cos'è NumPy?

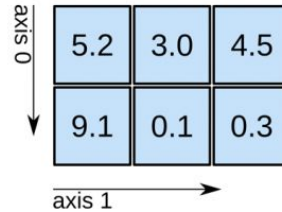
NumPy è una libreria di Python che permette di lavorare con gli array.

1D array



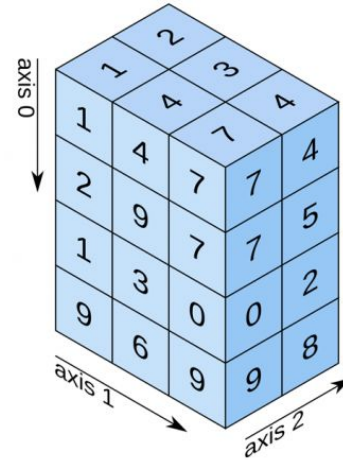
shape: (4,)

2D array



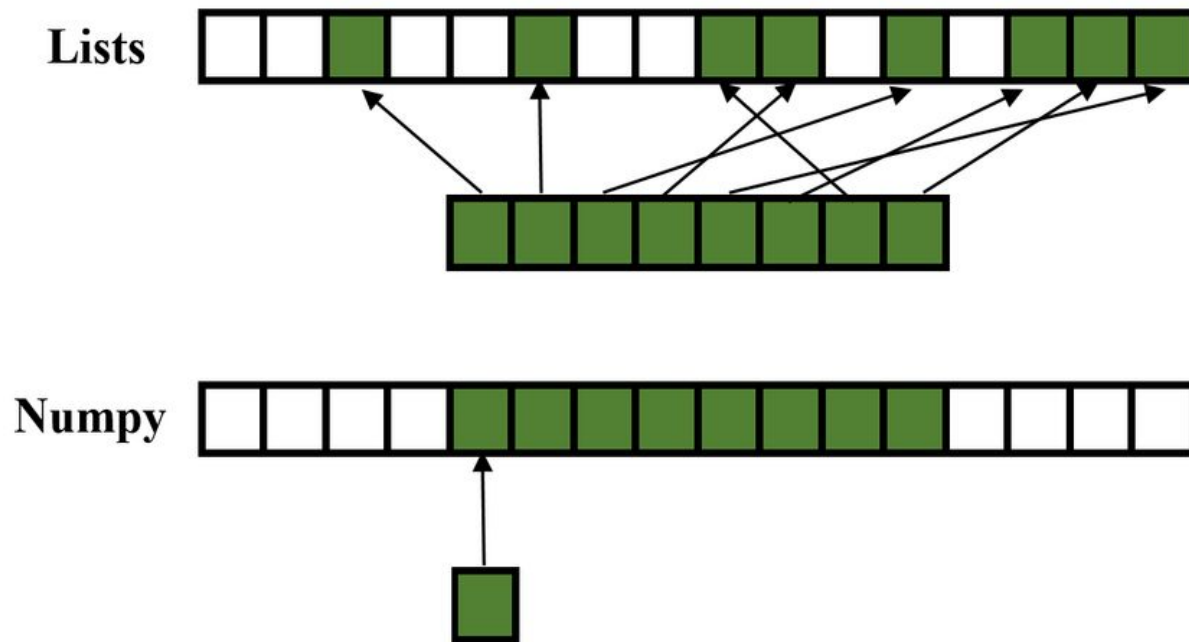
shape: (2, 3)

3D array



shape: (4, 3, 2)

Perché NumPy?



Section Navigation

Getting started

[What is NumPy?](#)[Installation !\[\]\(a8f9309f944226d1420f5fed22e2b6e6_img.jpg\)](#)[NumPy quickstart](#)[NumPy: the absolute basics for beginners](#)

Fundamentals and usage

[NumPy fundamentals](#)[NumPy for MATLAB users](#)[NumPy Tutorials !\[\]\(40770d9ed6ed4f1222ebf89a1396e8b2_img.jpg\)](#)[NumPy how-tos](#)

Advanced usage and interoperability

[Building from source](#)[Using NumPy C-API](#)[F2PY user guide and reference manual](#)[Under-the-hood documentation for developers](#)[Interoperability with NumPy](#)

Extras

[Glossary](#)[Release notes](#)[NumPy license](#)[🏠](#) > [NumPy user guide](#)

NumPy user guide

This guide is an overview and explains the important features; details are found in [NumPy reference](#).

Getting started

[What is NumPy?](#)[Installation](#)[NumPy quickstart](#)[NumPy: the absolute basics for beginners](#)

Fundamentals and usage

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[NumPy Documentation](#)

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NumPy Tutorial

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NumPy Random

[Random Intro](#)

NumPy Tutorial

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NumPy is a Python library.

NumPy is used for working with arrays.

NumPy is short for "Numerical Python".

Learning by Reading

We have created 43 tutorial pages for you to learn more about NumPy.

Starting with a basic introduction and ends up with creating and plotting random data sets, and working with NumPy functions:

[NumPy tutorial di W3 School](#)

Risorse utili per imparare la Data Science

1. **Kaggle** è una piattaforma che ospita una grande varietà di dataset, competizioni, corsi e tutorial
2. **Towards Data Science**
3. **Introduction to Statistical Learning** di Trevor Hastie
4. **W3Schools** per imparare [Python](#) e [NumPy](#)