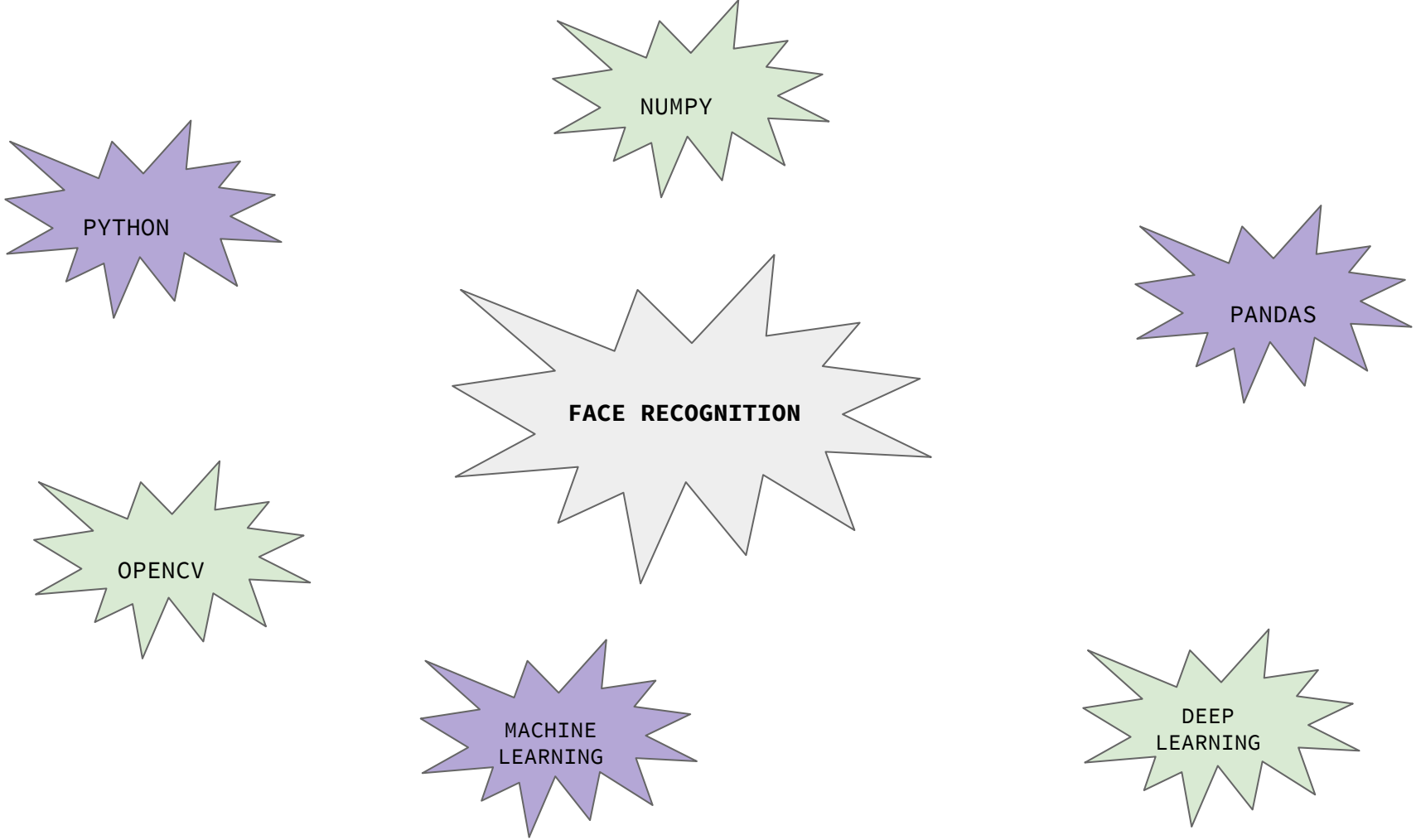
FACE RECOGNITION

Let’s give a try to make a machine adopt the person identification ability that’s been a feature of just HUMANS !!!


NUMPY
PYTHON
PANDAS
FACE RECOGNITION
OPENCV
MACHINE LEARNING
DEEP LEARNING

PYTHON

Easy to Code
Expressive
Free and Open Source

Interpreted

High-Level

Object Detected

Extensible
Embeddable
Large Standard Library

GUI Programming

Dynamically Programmed

Portable

PROS & CONS

Extensive Libraries

Improved Productivity

Readable

Speed Limitations

Weak in mobile computing & browsers

Design Restrictions

Underdeveloped Database Access Layers

LET'S LEARN & PLAY WITH PYTHON

NUMPY

NumPy is the fundamental package for scientific computing with Python. It contains among other things:

- a powerful N-dimensional array object
- sophisticated (broadcasting) functions
- tools for integrating C/C++ and Fortran code
- useful linear algebra, Fourier transform, and random number capabilities

PANDAS

Pandas is a high-level data manipulation tool developed by Wes McKinney.

It is built on the Numpy package and its key data structure is called the DataFrame.

DataFrames allow you to store and manipulate tabular data in rows of observations and columns of variables.

OPENCV

OpenCV is a cross-platform library using which we can develop real-time computer vision applications.

It mainly focuses on image processing, video capture and analysis including features like face detection and object detection.

COMPUTER VISION

Computer Vision can be defined as a discipline that explains how to reconstruct, interrupt, and understand a 3D scene from its 2D images, in terms of the properties of the structure present in the scene. It deals with modeling and replicating human vision using computer software and hardware. Computer Vision overlaps significantly with the following fields -

- **Image Processing** - It focuses on image manipulation.
- **Pattern Recognition** - It explains various techniques to classify patterns.
- **Photogrammetry** - It is concerned with obtaining accurate measurements from images.

WHAT CAN WE DO WITH OPENCV ???

- Read and write images
- Capture and save videos
- Process images (filter, transform)
- Perform feature detection
- Detect specific objects such as faces, eyes, cars, in the videos or images.
- Analyze the video, i.e., estimate the motion in it, subtract the background, and track objects in it.