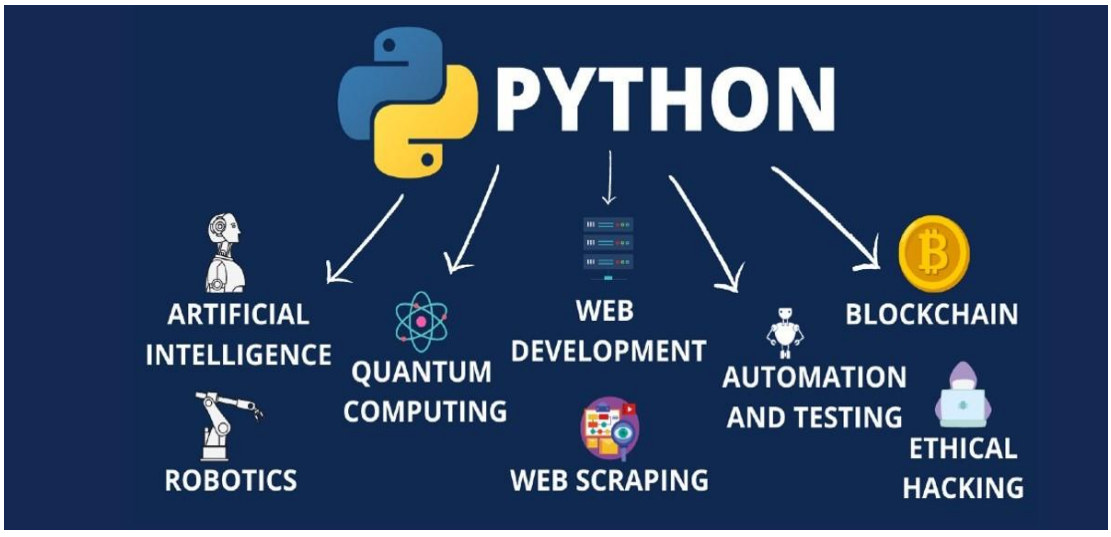
PYTHON WITH NLP & OPENCV

Python is an interpreted, object-oriented, high-level programming language with dynamic semantics. Its high-level built in data structures, combined with dynamic typing and dynamic binding, make it very attractive for Rapid Application Development, as well as for use as a scripting or glue language to connect existing components together. Python's simple, easy to learn syntax emphasizes readability and therefore reduces the cost of program maintenance. Python supports modules and packages, which encourages program modularity and code reuse. The Python interpreter and the extensive standard library are available in source or binary form without charge for all major platforms, and can be freely distributed.

There are also a couple of factors that make Python great for learning:

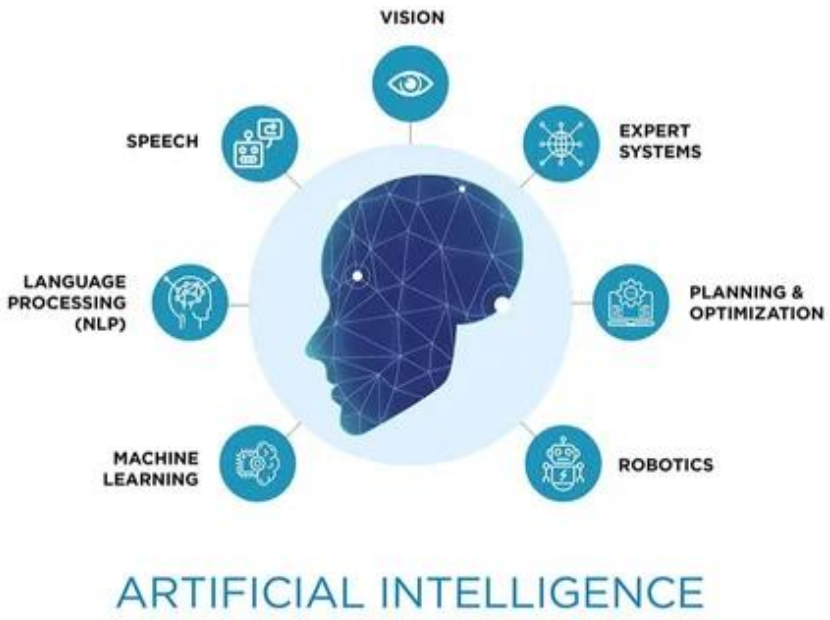
- It is easy to learn – the time needed to learn Python is shorter than for many other languages; this means that it's possible to start the actual programming faster;
- It is easy to use for writing new software – it's often possible to write code faster when



using Python

Artificial intelligence is the intelligence demonstrated by machines, in contrast to the intelligence displayed by humans.

Since the invention of computers or machines, their capability to perform various tasks has experienced an exponential growth. Humans have developed the power of computer systems in terms of their diverse working domains, their increasing speed, and reducing size with respect to time.



Here are some of the career paths and job opportunities in this domain:

1. AI Research Scientist
2. AI Software Developer
3. Natural Language Processing
4. Computer Vision Engineer
5. Robotics Engineering
6. AI Product Manager

OBJECTIVES:

Learn to implement natural language processing and computer vision techniques using Python for real-world applications. Build hands-on projects that combine text and image processing, and deploy them efficiently.

LIST OF PROGRAMS:

DAY 1

Python Fundamentals Refresher

- Data types, variables, and control structures
- Functions and modules

Introduction to Natural Language Processing (NLP)

- What is NLP?
- Real-world applications
- Introduction to NLP library
- Hands-on: Tokenization, Stemming, and Lemmatization
- Part-of-Speech Tagging
- Named Entity Recognition

DAY 2

Advanced NLP Techniques

- Sentiment Analysis
- Create a simple chatbot using NLP
- Create a conversational AI chat bot using API

Introduction to OpenCV

- What is OpenCV?
- Setting up OpenCV with Python
- Basic image operations
- Hands-on: Reading, displaying, and writing images

Object Detection and Recognition

- Accessing camera using OpenCV
- Image capturing using camera
- Hands-on: Face detection and recognition

TOTAL: 2 days

OUTCOME:

At the end of the course, the audience will be able to:

By the end of the workshop, participants will have gained hands-on experience in both NLP and OpenCV. They will be equipped to build basic NLP models and apply computer vision techniques to real-world problems. Additionally, participants will leave with the ability to integrate NLP and computer vision in practical applications, such as chatbots and facial recognition systems.