Smart OCR for Document Digitization:

Program Description:
In this guided project, we will start with a theoretical understanding of simple Python, OpenCV and Computer Vision, gradually move to text localization and detection.

Artificial Intelligence (AI) is that wave sweeping the technology world today. If you want to join this revolution but do not have the skills yet, this series of courses are right for you.
In addition to the development of machine learning that leads to new capabilities, we have subsets within the domain of machine learning, each of which offers a potential area of specialization for those interested in a career in AI.

- Neural Networks
  Neural networks are integral for teaching computers to think and learn by classifying information, similar to how we as humans learn. With neural networks, the software can learn to recognize images, for example. Machines can also make predictions and decisions with a high level of accuracy based on data inputs.
- Natural Language Processing (NLP)
  Natural language processing gives machines the ability to understand human language. As this develops, machines will learn to respond in a way a human audience can understand. In the future, this will dramatically change how we interface with all computers.
- Deep Learning
  Deep learning is at the cutting-edge of intelligent automation. It focuses on machine learning tools and deploying them to solve problems by making decisions. With deep learning, data is processed through neural networks, getting closer to how we think as humans. Deep learning can be applied to images, text, and speech to draw conclusions that mimic human decision making.

We'll be exploring how to use Python and the OpenCV (Open Computer Vision) library to analyse images and documents.

The most popular platforms in the world are generating never before seen amounts of image and video data. Now more than ever it’s necessary for developers to gain the necessary skills to work with image and video data using computer vision.

Computer vision allows us to analyze and leverage image and video data, with applications in a variety of industries, Social Distancing, Smart OCR for document digitization, including self-driving cars, social network apps, medical diagnostics, and many more.

As the fastest growing language in popularity, Python is well suited to leverage the power of existing computer vision libraries to learn from all this image and video data.

We'll start the course by learning the concept of text localization and detection. Then will move on to using the OpenCV library to open and work with image basics. Then we'll start to understand how to process images.

Afterwards we'll learn about argument parser and pytesseract. Then we'll move on to an entire section of the course devoted to the latest deep learning topics, including document digitization by Smart OCR.
This course covers all this and more, including the following topics:

- OpenCV
- Text Localization
- Text Detection
- Tesseract
- Argparser
- Covert BGR to RBG channel ordering

and much more!

Who this course is for:
These program is designed for Students/Faculty/Working Professionals. The only prerequisite for taking these courses is a basic understanding of Python or C++.

Technology Requirements:

Hardware

- PC: Windows 7 or higher with the latest updates installed.
- Mac: OS X 10.11 or higher with latest updates installed.
- Linux: Any recent distribution that has the supported browsers installed.
- Ubuntu: 17.10+ or 14.04 LTS+.
- Must have Install Permissions on Computer.

Installations:
Python: https://www.python.org/downloads/
PyCharm: https://www.jetbrains.com/pycharm/download/
Opencv-python (CV2): https://pypi.org/project/opencv-python/ OR
https://docs.opencv.org/master/da/df6/tutorial_py_table_of_contents_setup.html
Pytesseract: https://pypi.org/project/pytesseract/
Argparse: https://pypi.org/project/argparse/

Recommended:

- Cmake: https://cmake.org/download/
- Sublime Text: https://www.sublimetext.com/3
- Enable plugins
- Classroom, Google Meet, and Git Hub.
- An up-to-date version of Chrome/Firefox/ Safari/ Opera/ Microsoft Edge.

Prior Knowledge (Basic):
It will be a better opportunity to handle the training with ease if you have a dictionary understanding of the following concepts:

Python Basics
opencv
Basic understanding of Image properties, ASCII characters
Command Line Arguments
Creating a Virtual Environment
OCR

Course deliverables:

- Instructor videos
- Learn by doing exercises
- Implementing Smart OCR for document digitization
- Guided By Industry Professionals
- Certificate of Completion