PACKT PUBLISHING  
LEARNING PYTHON ARTIFICIAL INTELLIGENCE BY EXAMPLE 11/18



REVIEWER INFORMATION SHEET

# COURSE SUMMARY

Python has surfaced as a dominant language in AI/ML programming because of its simplicity and flexibility. It has great support for open-source libraries such as Scikit-learn and TensorFlow.   
Built for rookie AI enthusiasts across four realistic projects, this course covers modern techniques that make up the world of Artificial Intelligence. Dive into your first natural language processing project, build a facial recognition system, and build your very own self driving steering code. You will explore the use of neural networks and deep learning, and how you can train and test sets for feature extraction. You'll be introduced to the Keras deep learning library, which you will use to predict taxi journey times, and to the use of natural language processing to find the most relevant articles in Wikipedia.

By the end of this video course, you will be confident enough to build your own AI projects with Python, and ready to take on more advanced content as you move on.

## ASSUMED KNOWLEDGE

To fully benefit from the coverage included in this course, you will need:

* Prior working knowledge of the Python (version 3) language, including installing libraries using pip and/or conda
* Familiarity with Git and GitHub for source control
* Familiarity with a Linux or Windows operating systems from a command line perspective, including the ability to install OS level libraries (through apt, yum, brew or equivalent)
* (Preferable) Familiarity with Anaconda
* (Optional) Experience with Docker, cloud computing (Google Cloud, AWS or Azure) or Virtual Environments (e.g. VirtualBox or VMWare)

## EXERCISE FILES

The exercise files in this course are:

* [Available on GitHub](https://github.com/PacktPublishing/Learning-Python-Artificial-Intelligence-by-Example)
* Structured at a **section** level. At the start of each section there is a new snapshot to work from.
* There are sample Docker container configurations provided for some modules, but this is not essential.

# TECHNICAL REQUIREMENTS

This course has the following software requirements:

* An editor like [Atom](https://atom.io), [Sublime Text](https://www.sublimetext.com) or [PyCharm](https://www.jetbrains.com/pycharm/)
* The [AWS CLI](https://aws.amazon.com/cli/)

It is recommended to use [Anaconda](https://www.anaconda.com/download), however if you so wish you can manual create environments using [Python 3.6](https://www.python.org/downloads/release/python-360/)

The following main libraries are required:

* [OpenCV 3.4](https://www.opencv.org/opencv-3-4.html) and [opencv-python](https://pypi.org/project/opencv-python/)
* [Tensorflow 1.11](https://www.tensorflow.org/install/pip) (and [pre-requisites if using a GPU](https://www.tensorflow.org/install/gpu))
* [Keras 2.2](https://keras.io/#installation)
* [geopandas](http://geopandas.org/install.html)
* [Numpy](https://www.scipy.org/scipylib/download.html), [Pandas](https://pandas.pydata.org/) and [SKLearn](https://scikit-learn.org/stable/install.html) (note that these are included in Anaconda)
* [Jupyter notebook](http://jupyter.org/install.html) (note that this is included in Anaconda)

This course has been tested on the following system configuration:

**Mac OSX:**

* **OS:** Mac OSX 10.14.1 (Mojave)
* **Processor:** Quad Core Intel i5
* **Memory:** 8GB
* **Hard Disk Space:** 50GB

**Windows:**

* **OS:** Windows 10, and Ubuntu 16.04 LTS
* **Processor:** Quad Core Intel i7
* **Memory:** 16GB
* **Hard Disk Space:** 50GB

**Google Cloud**:

* **OS** Ubuntu 16.04 LTS
* **Processor:** 2 core
* **Memory:** 13GB and 48GB
* **Hard Disk Space:** 50GB
* **Video Card:** Nvidia K80

**NOTE: The course relies heavily on Jupyter Notebooks so it is essential that you have access to a browser to view and run these.**

OTHER INFORMATION

* Section 2, video 3 relies on the use of AWS Rekognition. To fully complete this video you will need an AWS account with a valid payment card. Note that during development of this course, the AWS charges did not exceed $10, but it is essential that you set up billing alerts and notifications to manage your spend accordingly.

You do not need to complete video 2.3 to get value from the rest of the course

* Due to the nature of deep learning, which is explored in sections 3 and 4, it is advisable to have access to an environment with a suitable [Nvidia GPU supported by Tensorflow](https://www.tensorflow.org/install/gpu). This is likely to significantly decrease model training times for these sections.

However, pre-trained models are provided as part of this course, and with enough time (likely to be a few days depending on hardware specification), these can also be trained without a GPU.