**Python Training for Mobileye Employees**

Winter 2022-2023

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# Core Python Workshops

Three levels of training for developers interested in learning Python:

* Individuals with a minimal background in software development (Programming with Python)
* Individuals with a background and experience in software development but no experience in Python (Practical Python)
* Individuals with previous experience in Python (Python for Pythonistas)

There is some overlap in the content of the trainings, so you should choose the training that is most relevant for you.

## Programming with Python

**Python Training for Non-Developers: For QA, IT, and Other Professionals**

A workshop spanning five full-day sessions, designed for individuals with a basic background in programming who would like to improve their software development skills and learn Python.

Throughout the course, we will start with Python basics, cover essential software development principles, and dedicate significant time to practicing control structures, writing functions, working with the standard library and third-party libraries, reading and writing text and CSV files, using HTTP+JSON, and practicing object-oriented Python.

We highly recommend setting aside extra time between sessions for independent practice.

This training is for:

* Those with a basic programming background or no programming background at all. For example, individuals who studied C programming as part of their degree studies or elsewhere but are not actively involved in software development on a daily basis.
* No previous Python experience is required. However, if you have dabbled a little in Python development, this can certainly be beneficial.
* For those who are familiar with Windows and/or Linux and/or Mac.

This training is not for:

* Experienced software developers. Other training for developers is featured below.

## Practical Python

**Python Training for Experienced Software Developers**

A workshop spanning four full-day sessions, designed for individuals with a solid background in software development in other programming languages, such as CPP, C, Java, or C#.

This accelerated training provides an overview of Python as a dynamic language that on one hand has many shortcuts but on the other emphasizes readability and simplicity. We will go over its unique data structures, the standard library, and third-party libraries, and examine Python's approach to object oriented programming. We will also learn unique elements of the language such as generators and decorators.

The training includes an extra day dedicated to a brief introduction to scientific Python, including exposure to libraries such as Numpy, Pandas, and Matplotlib, and how to work with Jupyter Lab.

This training is for:

* Software developers engaged in daily software development who want to quickly dive into the world of Python.
* No previous Python experience is required. Of course, if you have used Python on occasion or have dabbled a little with the language before, it can certainly be beneficial.

This training is not for:

* Individuals without a solid background in software development.
* Those who are not interested in learning new material at a fast pace. The training covers many topics with the aim of exploring the programming language extensively and in-depth within the given timeframe.

## Python for Pythonistas

**Python Training for Software Developers with Prior Python Experience**

A workshop spanning four full-day sessions, designed for individuals with a solid background in software development and substantial experience in Python development.

This training is designed based on the requirements and background of the teams and participants. It covers selected topics, such as:

* Best practices, idiomatic Python
* Generators, decorators, context managers
* Concurrency (threading, multiprocessing, concurrent futures, celery)
* Non-relational databases (mongodb)
* Relational databases (SQL, Django ORM)

At this stage, the curriculum includes three days of training plus an extra day dedicated to introducing scientific Python.

# Selected Topics in Python

## Scientific Python Workshop: NumPy+Pandas

**Training for Using Scientific Libraries for Individuals with Previous Python Experience**

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A two-day workshop: Introduction to the NumPy and Matplotlib scientific libraries and the Pandas data processing library.

In this workshop, we will explore these packages beginning with their basic principles through extensive practice. We will focus on the practical use of Jupyter and other tools, covering reading, access, and analysis of numerical and tabular data as well as data visualization through various types of graphs.

This training is for:

* Experienced Python developers who wish to expand their toolkit by adding the ability to use scientific libraries.
* Those who want to master the material through significant practice.

This training is not for:

* Those who are already familiar and proficient with these libraries.
* Those who are not experienced in Python.

## Web Development with Django

Specialized Training by Developing a Personal Project

***The web framework for perfectionists with deadlines*.**

The Django framework is designed for developing web applications using Python. In this unique training, each participant will work on a small personal project over a period of time dedicated to learning, some of which will be done in a group and some independently.

The goal of the training is to learn and specialize in this complex framework and achieve a high level of mastery. Those who complete the training will be able to quickly build professional and aesthetic web solutions that are easy to maintain.

Throughout the training, participants will learn to efficiently work with open-source third-party libraries, plan and work on a complete project using the MVC architecture while adhering to conventions that facilitate the project's rapid future growth.

The training structure includes:

* Four full-day group sessions (one every two weeks).
* 5-10 days of independent work before, during, and after the training.

Before the training, each participant will learn the fundamental principles of the Django system independently with remote guidance from the training team.

During the first two sessions we’ll build a web-based application together to learn how to work with the system. After that, each participant (or pair of participants) will choose a small personal project to build using Django and work on it throughout the training.

This training is for:

* Experienced Python developers who want to learn how to build beautiful web solution quickly.
* Those who enjoy designing and building applications, learning new tools, libraries, and technologies, and are willing to invest personal time and effort to do so.

Recommended background:

* Previous experience in SQL, HTML, and JS. You can learn the basics of each of these technologies on your own with minimal effort (a few hours for each) with our guidance before the training.
* Using git.

This training is not for:

* Individuals with no Python experience.
* Individuals who don’t like having three or more code windows open on their screen simultaneously.
* Those who are unable or unwilling to invest additional time and effort beyond the training sessions.

# Tips for All Trainings

* All trainings are based on active participation and practice by the participants with guidance from the instructors.
* Participants should come equipped with a laptop and the relevant installations that will be provided before each training.
* Participants are welcome to raise questions and issues from their day-to-day work, and parts of the training can be tailored to address topics or libraries relevant to the participants.
* Those who are interested can receive additional exercises ("homework") for practice and self-study.
* The instructor team: All training sessions will be conducted by Udi Oron, an experienced Python developer and instructor. If necessary, additional practice sessions will be scheduled with other assistant instructors.

**LINUX**

The goal of this training is to provide practical tools for daily work in a Linux environment, as well as a broad overview of the operating system.

* Target audience: Software developers with no experience working with Linux or with very limited knowledge.
* Rationale: To consolidate issues that are difficult to get to on your own - to guide the learning process in a way that’s highly effective for participants, in an aim to get to the point and not waste time.
* Challenge: To build instructive and engaging exercises/tasks.
* It’s highly likely that some of the content will change. The topic order has not yet been finalized.