



# Real Time College

## Computer Vision \ Image Processing

**Duration:** 595 Hours  
**Hands-On-Training:** 65%

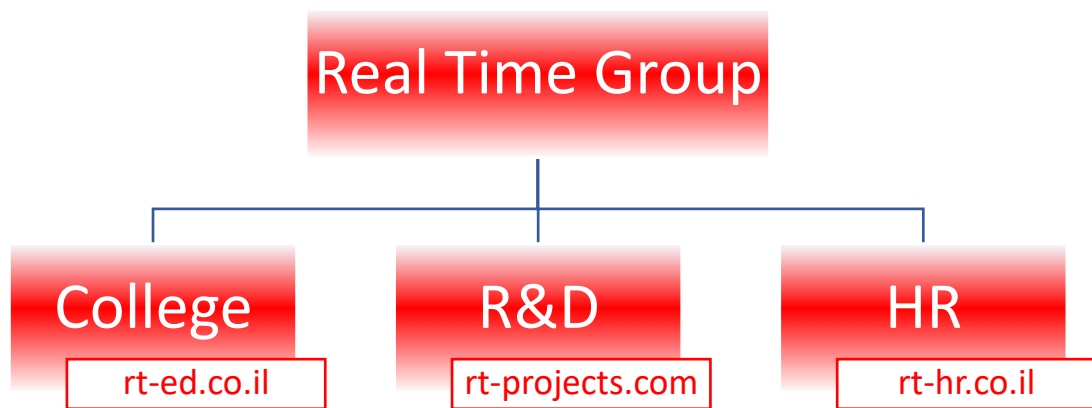




Real Time Group is a multi-disciplinary dynamic and innovative Real-Time O.S. and Embedded Software Solutions Center, established in 2007.

Providing Bare-Metal and Embedded Linux solutions, professional services and consulting, end-to-end flexible system infrastructure, outsourcing, integration and training services for Hardware, Software and RT-OS \ Embedded Systems.

The company is divided into the following three Divisions:



### **Training Division:**

Professional Training Services for Hardware, Software, RT-OS and Embedded systems industries.

We provide the knowledge and experience needed to enable professional engineers to Develop, Integrate and QA Hardware, Software and Networking Projects.

In order to ensure experience, all courses are practical – hands-on-training. The latest Development, QA and Automation equipment which are adopted by the industry are used.

All students are supplied with Development-Boards for home-work and course projects.



## Course Overview:

Being a leading provider of Computer Vision & Machine Learning \ Deep learning Solutions with many ongoing Development projects, we have gained experience solving hundreds of complex projects.

That's why we know exactly what it takes to make you one of us.

This RT-Group's hand-on-training course, provides the most complete and comprehensive Computer Vision Engineering Full Path.

It's designed to provide the knowledge, development tools, the experience needed in order to place you as a Computer Vision Developer and help you integrate in our company's Development Division and the Israeli \ word-wide Hi-Tech industry.

The track is composed out of **12** courses and includes all the ML development stages. The Track is divided into 2 parts:

### 1. **Software Development Courses** (on the right side)

A complete guide to Programming using Python, focusing on giving you real world Machine Learning coding experience, by working with Data Bases, Data Analytics tools using ML oriented Python libraries such as Numpy, SciPy and Matplotlib.

Many companies use Linux as an ML development platform, That's the reason you'll also achieve knowledge in Linux during the course.

You'll also learn how to use Cloud Computing (Azure \ AWS, Google cloud and micro-services).

All data is maintained in Databases, for this reason you'll also learn how to work with SQL and big data.



matplotlib



## 2. **Computer Vision Courses** (on the left side)

We'll start with basics of ML, the purpose of ML, where it applies in the real world. Types of ML, such as supervised vs unsupervised learning, model evaluation, then we'll dive into "**Implementing ML with Python**", where we'll go through the mathematical knowledge needed for ML, additional Software tools, learn about regression, classification, clustering, algorithms such as sci-kit learn, K Nearest neighbors, k means clustering, implement solutions with Neural Networks using platforms such as TensorFlow and Kera's, Later we'll focus on Image processing diving into **OpenCV, CUDA** and implementing the above using **NVIDIA Jetpack** on **Jetson Modules** adopted by the industry .

### **Who should attend:**

- System programmers \ Engineers who wish to learn ML.
- Students who wish to specialize in\work as Data Analysts \ Business Intelligence \ Data Science.
- Students who wish to specialize in\work Computer Vision ( \*\*Additional Course in needed for this field – please see our web site\contact us).

### **Prerequisite:**

- Basic Computer skills (Operating windows OS).
- Basic knowledge in math (no need to be a mathematician just the basics 😊).
- No previous experience in PROGRAMMING is necessary, its taught as part of this [Computer Vision Full Path](#).

The following table concludes the list of courses in the Track, Feel free to click on the required course name for an elaborated Syllabus per course.

## Image Processing / Computer Vision Course

Course Name	Course Description	Length [AH]
<a href="#"><u>Machine Learning Fundamentals</u></a>	Machine Learning can adapt its behavior based on past programming activity and feedback. This Course introduces Machine Learning theory and foundations as well as best practices for ml.	35
<a href="#"><u>Machine Learning with Python</u></a>	Python offers a wide range of libraries that can be used for ML(NumPy, SciPy, Matplotlib).In this course we will learn how to Implement these libraries and simplicity developer's ability to write advanced and reliable code	60
<a href="#"><u>Big Data and Cloud</u></a>	Big Data and Cloud computing course is a comprehensive training which provides access to best practices for analyse huge volume of data on cloud for strategic advantages	40
<a href="#"><u>OpenCV for Computer Vision</u></a>	In this course we'll learn the Basics of Computer Vision and Image Processing, we'll build Image Classifiers in Python using Keras & TensorFlow, Object Detection ( i.e. Face Detection), Object Tracking, Motion Analysis, Multi Object Detection and more.	40
<a href="#"><u>Deep Learning With OpenCV</u></a>	Deep Learning / Deep neural networks is the most advanced subset of artificial intelligence. In This course we will learn how to develop & test deep learning models, inspired by the human brain We'll be using TensorFlow \ Kara's based platforms to manage end-to-end ML and neural networks projects.	60
<a href="#"><u>CUDA</u></a>	CUDA allows parallel processing of similar tasks on your GPU all at once, giving your application a tremendous boost. This course will teach you how to use CUDA Parallel Programming, how to use Design and Implement GPU algorithms How to optimize your application by using tools such as Nvprof and Visual Profiler.	35

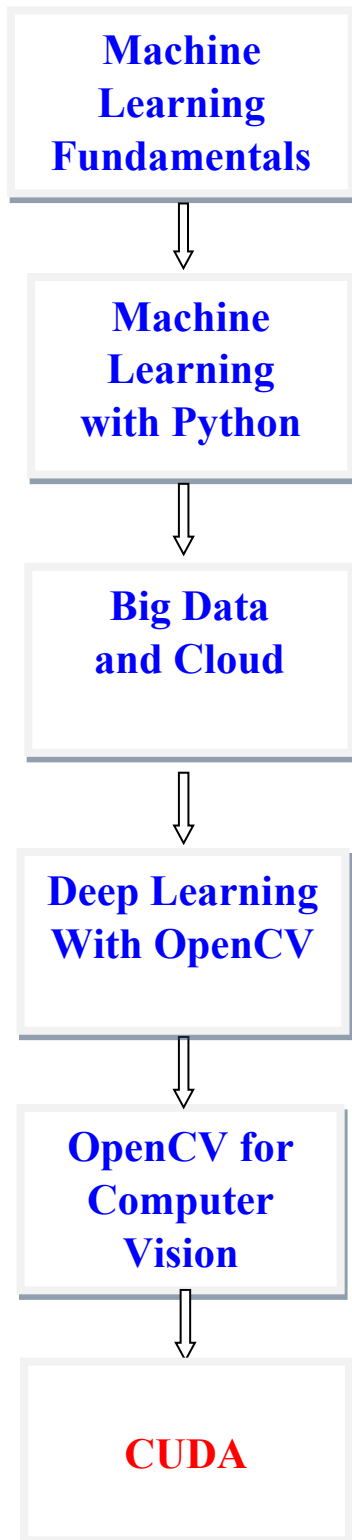
<a href="#">NVIDIA Jetpack</a>	<p>NVIDIA JetPack SDK is the most comprehensive solution for building AI Applications on GPUs.</p> <p>This Practical, hands-on AI training will teach you how to implement AI Applications on Jetson modules using the JetPack SDK</p>	35
--------------------------------	--	----

## Software Programming Courses

Course Name	Course Description	Length [AH]
<a href="#">Linux Fundamentals &amp; BASH Scripting</a>	<p>Provides a comprehensive guide to Linux™, learn how to manage files and directories, Linux security mechanisms, design and write shell programs of high complexity, manage multiple concurrent processes and more.</p>	75
<a href="#">Python Programming</a>	<p>Focusing on Python 3, aiming to provide you with the knowledge and experience needed in order to program Object Oriented real industry applications.</p>	90
<a href="#">Scientific Python</a>	<p>Scientific computing in Python builds upon a small core of packages: Python, a general purpose programming language. It is interpreted and dynamically typed and is very well suited for interactive work and quick prototyping, while being powerful enough to write large applications in.</p>	35
<a href="#">SQL</a>	<p>SQL is the primary language for relational database management and using SQL enables you to work with large data sets easily and work efficiency with unlimited information.</p>	35
<a href="#">Git</a>	<p>Git, is a tool to save versions of your code and software development process.</p> <p>In this course you will learn Git's core features and workflow, different ways to undo changes or save multiple versions of a project, and how to collaborate with other teams and developers.</p>	30
<a href="#">Final Project</a>		

The following Block Diagram concludes the order of the courses in the Track.  
 Feel free to click on the required course name for a detailed description.

*Machine Learning\AI Courses*



*Software Programming Courses*

