



Course Title:

Computer Vision with MATLAB

Course Purpose:

This one-day course provides hands-on experience with advanced topics in computer vision. Within this course the theoretical background will be given, along with using MATLAB's functions to demonstrate implementations of these algorithms.

Topics include:

- Object Tracking
- Image Registration
- 3D
- Wavelets
- Deep learning

Pre- requisites:

The course participants should have technological background, with knowledge and experience in basic image processing and MATLAB.



- ✓ 1 training day
- ✓ Hours: 09:00-17:00
- ✓ Total training hours: 8

Teaching method:

The course combines lectures, demonstrations and practical exercises in MATLAB. The course is in Hebrew, but the training materials are in English.

עמוד מס' 1

Training Center Systematics - Contact information:

Phone number: 03-7660111 Ext: 5 **Email:** training@systematics.co.il

Website: <http://www.systematics.co.il/mathworks>



Course Objective:

Image Acquisition, Object Detection, Segmentation & Tracking

Objective: Track a jet aircraft and track moving objects in a video captured by an Unmanned Aerial Vehicle; System objects for video processing and computer vision; Tracking algorithms – KLT point Tracking, Histogram-Based Tracking etc.

Registration

Objective: Aerial Photos registration and intensity – based registration.

Speeding – Up Image Processing Algorithms

Objective: Use parallel computing, GPU hardware and Automatic C-Code generation to speed-up MATLAB Algorithms.

Wavelets

Objective: De-noise and compress images using wavelets technique.

Bag of Features Image Classification

Objective: Classify images using "bag of visual-words".

Deep Learning for Computer Vision

Objective: Use Convolutional Neural Network for Detecting and object and classifying it.

Camera Calibration and 3D reconstruction

Objective: Calibration of stereo-images and generating a 3D images.

Point Cloud Processing

Objective: Process Point Clouds.

Optical Character Recognition

Objective: OCR.

עמוד מס' 2

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