



Course Title:

Computer Vision

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:

- Feature Based Image Registration
- Face Detection using Viola Jones algorithm
- Motion Estimation with Optical Flow
- Focus Estimation in real life images
- Active contours
- Wavelets

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.

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:

Feature Based Image Registration

Objective: Get to know features based methods for registration, including: key points detectors, descriptors, calculating the geometric transformation, avoiding numerical hazards

Face Detection using Viola Jones algorithm

Objective: Get to know features selection via boosting and the Viola Jones algorithm for face detection

Motion Estimation with Optical Flow

Objective: theory of optical flow , how optical flow can be used for real life applications

Focus Estimation in real life images

Objective: basic concepts in focus estimation: PSF, MTF, the slant edge method, how to estimate focus in real life images, deblurring algorithms

Active contours

Objective: basic concepts of variational methods, edge and edge-less active contours, level set approaches

Wavelets

Objective: from Fourier analysis to wavelets, CWT, DWT, Wavelets in computer vision

עמוד מס' 2

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