Automation Engineering

Course: 69661 - IMAGE PROCESSING AND COMPUTER VISION M

CFU: 6

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Program:

1. Introduction – Basic definitions related to image processing and computer vision. An overview across major application domains.


6. Segmentation by Motion Estimation – Frame differencing and background subtraction. Background initialization and update. Robustness to illumination changes.


12. 3D Computer Vision – Technologies: stereo vision, laser-scanning, TOF. RGB-D images (e.g. Kinect sensor). Stereo matching algorithms: local, semi-global and global approaches. Basics elements on point-cloud processing and analysis.

**Prerequisites:** Basic programming skills (preferred language: C)

**Exam:** Students are required to carry out and present a software project related to solving a real-world image processing or computer vision problem. Such a project can be either chosen among a list provided by the teacher through the course web-site or proposed by the student.

The exam is oral and comprises both project discussion as well as assessment of theoretical knowledge.

**Links:** [http://didattica. arches.unibo.it/course/view.php?id=59](http://didattica. arches.unibo.it/course/view.php?id=59)