

COURSE DETAIL

IMAGE PROCESSING & COMPUTER VISION

Country

Italy

Host Institution

University of Bologna

Program(s)

University of Bologna

UCEAP Course Level

Upper Division

UCEAP Subject Area(s)

Computer Science

UCEAP Course Number

183

UCEAP Course Suffix**UCEAP Official Title**

IMAGE PROCESSING & COMPUTER VISION

UCEAP Transcript Title

IMG PROCESNG&VISION

UCEAP Quarter Units

6.00

UCEAP Semester Units

4.00

Course Description

This course is part of the Laurea Magistrale program. The course is intended for advanced level students only. Enrollment is by consent of the instructor. The course focuses on the basic algorithms, tools, and systems for the management, processing, and analysis of digital images. Special attention is placed on the design and development of simple systems oriented to real-world computer vision applications such as those requiring segmentation and classification of objects in digital images. The course discusses topics including basic definitions related to image processing and computer vision, image formation and acquisition, intensity transformations, spatial filtering, image segmentation, binary morphology, blob analysis, edge detection, local invariant features, and object detection. The theoretical part of the course is complemented by assisted hands-on lab sessions based on Python and the OpenCV library. Lab sessions cover selected topics such as intensity transformations, spatial filtering, camera calibration, motion estimation, and local invariant features. Students are provided with the software tools, image/video archives, and support that enable practical implementation and testing of most of the topics discussed in class, in order to provide in-depth analysis of the course subject matter.

Language(s) of Instruction

English

Host Institution Course Number

91254

Host Institution Course Title

IMAGE PROCESSING & COMPUTER VISION

Host Institution Campus

BOLOGNA

Host Institution Faculty

COMPUTER SCIENCE

Host Institution Degree

LM degree in Artificial Intelligence

Host Institution Department

COMPUTER SCIENCE

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