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 AND COMPUTER VISION

Host Institution Course Details
https://www.unibo.it/en/teaching/course-unit-catalogue/course-unit/2021/391122

Host Institution Campus
BOLOGNA

Host Institution Faculty
COMPUTER SCIENCE

Host Institution Degree
LM degree in Artificial Intelligence

Host Institution Department
COMPUTER SCIENCE

Course Last Reviewed
2021-2022

Print