SUBJECT: Computer Vision
NUMBER OF CREDITS:
YEAR/ SEMESTER: 1/2
NUMBER OF HOURS/WEEK: 2C+2L
NUMBER OF WEEKS: 14
SUBJECT TYPE: optional, specialized
COURSE OBJECTIVES:

1. Knowledge of fundamental concepts of image analysis
2. Description of several important computer vision algorithms
3. Acquiring the necessary knowledge for constructing image analysis specific applications

CONTENT:

1. OpenCV library. Instalation and generalities
2. Loading, printing and saving images
3. Creation of a GUI application using QT for image processing
4. Accessing values for pixels from an image
5. Image processing using classes
6. The histogram of an image
7. Defining regions of interest in images
8. Image content detection using the histogram
9. Transformation of images by morphological operations
10. Line, contour and component extraction
11. Interest point detection
12. Video processing

BIBLIOGRAPHY:

1. R. Laganière, OpenCV 2 Computer Vision Application Programming Cookbook, Packt Publishing, Birmingham, UK, 2011.
2. G. Bradski, V. Pisarevsky, J. Y. Bouguet, Open Source Computer Vision Library by, Springer, 1st ed. 2006.
3. G. Bradski, A. Kaehler, Learning OpenCV: Computer Vision with the OpenCV Library, O'Reilly Media, 2008.
4. P. C., Robotics, Vision & Control, Springer 2011.
5. G. A., Introduction to programming with OpenCV, Illinois Institute of Technology, 2006, http://www.cs.iit.edu/~agam/cs512/lect-notes/opencv-intro/opencv-intro.html.

WORKING LANGUAGE: Romanian
EVALUATION: laboratory work
EVALUATION MODE: Exam