

30263 - Computer Vision

Syllabus Information

Academic Year: 2020/21

Subject: 30263 - Computer Vision

Faculty / School: 110 - Escuela de Ingeniería y Arquitectura

Degree: 439 - Bachelor's Degree in Informatics Engineering

ECTS: 6.0

Year: 4

Semester: Second semester

Subject Type: ---

Module: ---

1.General information

1.1.Aims of the course

1.2.Context and importance of this course in the degree

1.3.Recommendations to take this course

2.Learning goals

2.1.Competences

2.2.Learning goals

2.3.Importance of learning goals

3.Assessment (1st and 2nd call)

3.1.Assessment tasks (description of tasks, marking system and assessment criteria)

4.Methodology, learning tasks, syllabus and resources

4.1.Methodological overview

4.2.Learning tasks

4.3.Syllabus

The course will address the following topics:

1. Image formation and acquisition. Imaging representation models.
2. Fundamental methods for image processing.
3. Feature detection (points, contours...).
4. Segmentation. Mathematical morphology.
5. Optical flow.
6. 3D vision.
7. Computer vision applications.

4.4.Course planning and calendar

4.5.Bibliography and recommended resources

[BB: Basic bibliography / BC: Complementary bibliography]

<http://psfunizar7.unizar.es/br13/egAsignaturas.php?codigo=30263&Identificador=15427>

[BB] 1. Szeliski, Richard. Computer vision : algorithms and applications / Richard Szeliski London : Springer, cop. 2011

[BB] 2. Sonka, Hlavac, Boyle. Image Processing, Analysis and Machine Vision: Cengage Learning, 2014.

[BB] 2. Forsyth, David A.. Computer vision : a modern approach / David A. Forsyth, Jean Ponce . - 2nd ed. Upper Saddle River : Prentice Hall, 2012

[BB] Klette: Concise Computer Vision: An introduction into theory and algorithms: Springer-Verlag, 2014.

[BB] Kaehler, Bradski. Learning OpenCV 3: Computer Vision in C++ with the OpenCV Library: O'Reilly, 2017.

[BB] 4. Bradski, G. Learning OpenCV: Computer Vision with the OpenCV Library / G. Bradski and A. Kaehler O'Reilly Media, Inc. 2008.

[BB] González, Rafael C.. Digital image processing / Rafael C. González, Richard E. Woods. . 3rd ed. Upper Saddle River (New Jersey) : Pearson Prentice Hall, cop. 2010.

URL list

Subject presentations and notes. Documents for practices. [<http://add.unizar.es>]