

Computer Vision

Overview

- Introduction to vision: image formation and processing, histogram operations, filtering, color space...
- Basic operations: intensity and geometric transformations, morphological operations...
- Image segmentation: from simple thresholding to region-growing methods.
- Feature extraction: texture descriptors (LBP), local features (SIFT, HOG), etc.
- Image classification: object detection, tracking, traditional machine learning approaches (clustering, regression, dimensionality reduction) and deep learning strategies...

Applications

- Object detection and recognition.
- Face recognition, age estimation.
- Video tracking.
- Biomedical image analysis.

Bibliography

1. [Forsyth, Ponce. Computer Vision: A Modern Approach. Pearson. 2012.](#)
2. [Richard Szeliski. Computer Vision: Algorithms and Applications. Springer-Verlag. 2011.](#)
3. [Ian Goodfellow *et al.* Deep Learning. MIT Press. 2016.](#)