



UNIVERSITÀ DI PISA

# Assignment N. 2:

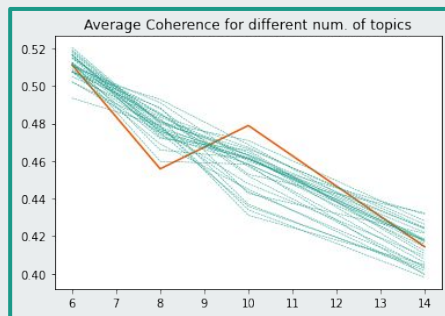
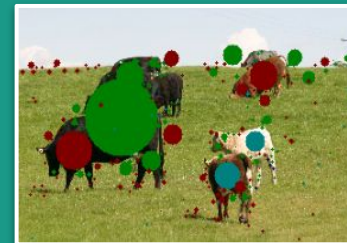
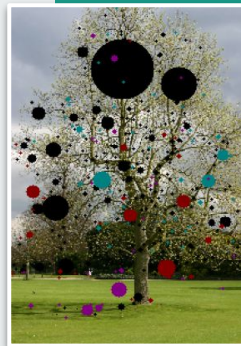
## Image Understanding via LDA and Bag of Visual Terms Representation

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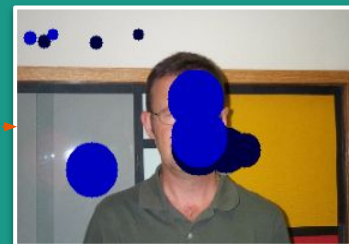
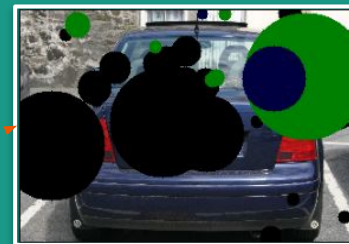
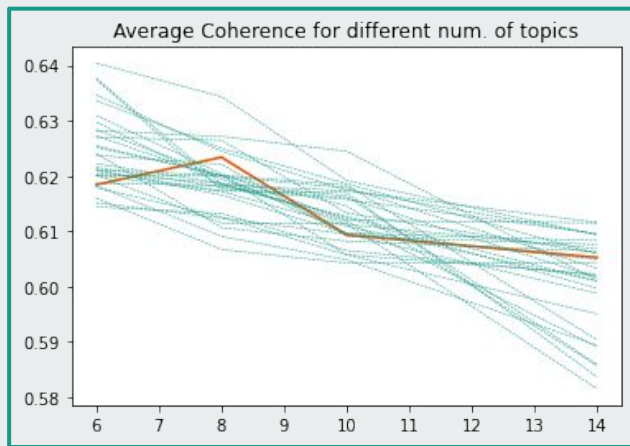
ISPR Course A.Y. 2020/2021  
Marco Petix

# Analysing the results for 6 Topics

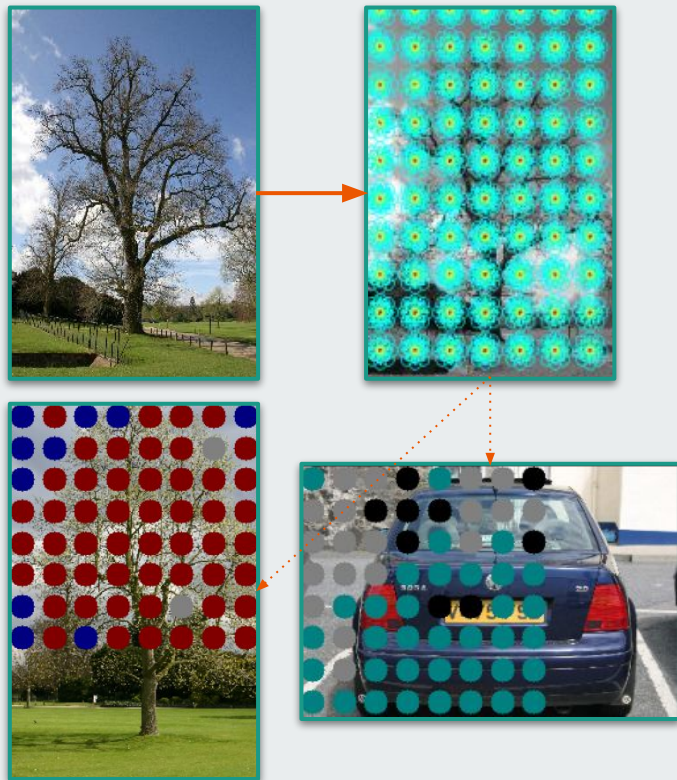
- Topic 1
  - Tree branches
- Topic 2
  - Cows (most of them)
- Topic 3
  - Buildings, cars and cows!?
- Topic 4
  - Cars, planes and bikes
- Topic 5 (Unspecified)
- Topic 6: (Unspecified)



# Extracting SIFT descriptors from MSER Keypoints



# Grid Sampling, DAISY Descriptors and Conclusions



- Sparse Sampling: **SIFT, MSER**
  - Focuses on the most informative parts of the images
  - Some regions may remain undetected
- Grid Sampling: **DAISY**
  - Describes the global content of an image
  - Lot of background information that may hinder the classification of an image
- What about **Adaptive Sampling**?
  - Firstly applying sparse sampling to a particular image
  - Then apply a coarse grid sampling to the under-described areas