

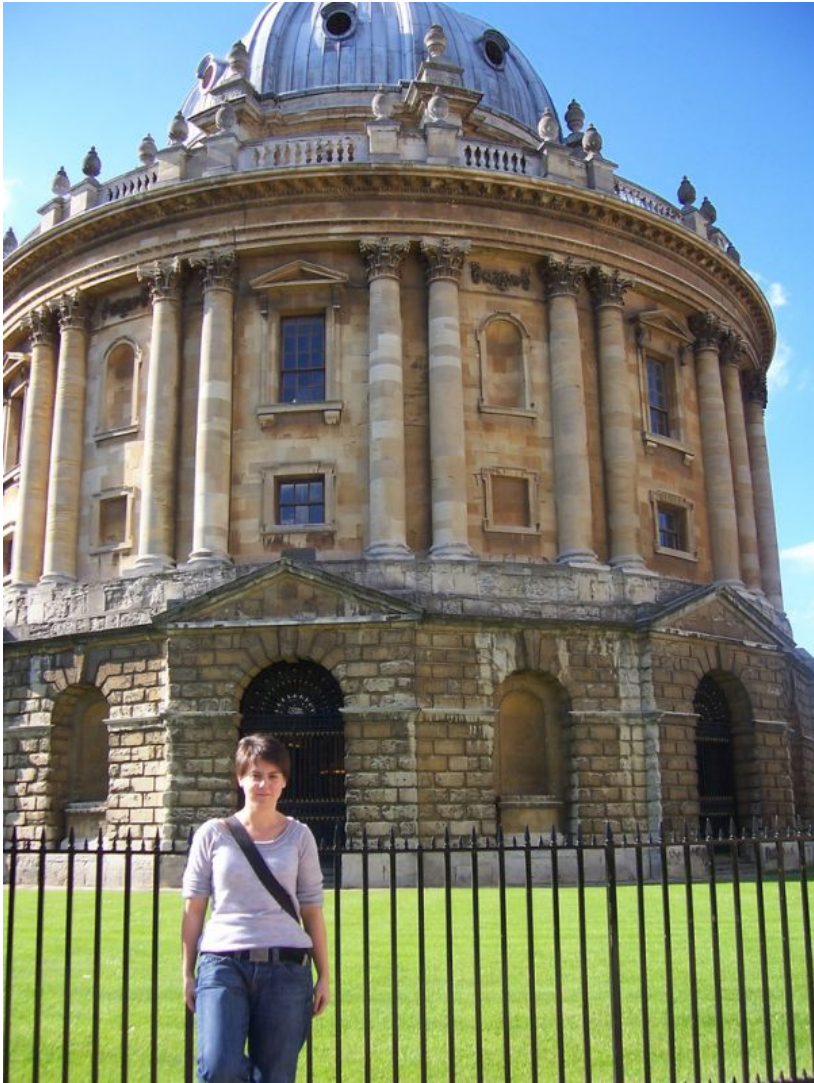
# Ανάλυση Εικόνας

## Διπλωματικές εργασίες 2010



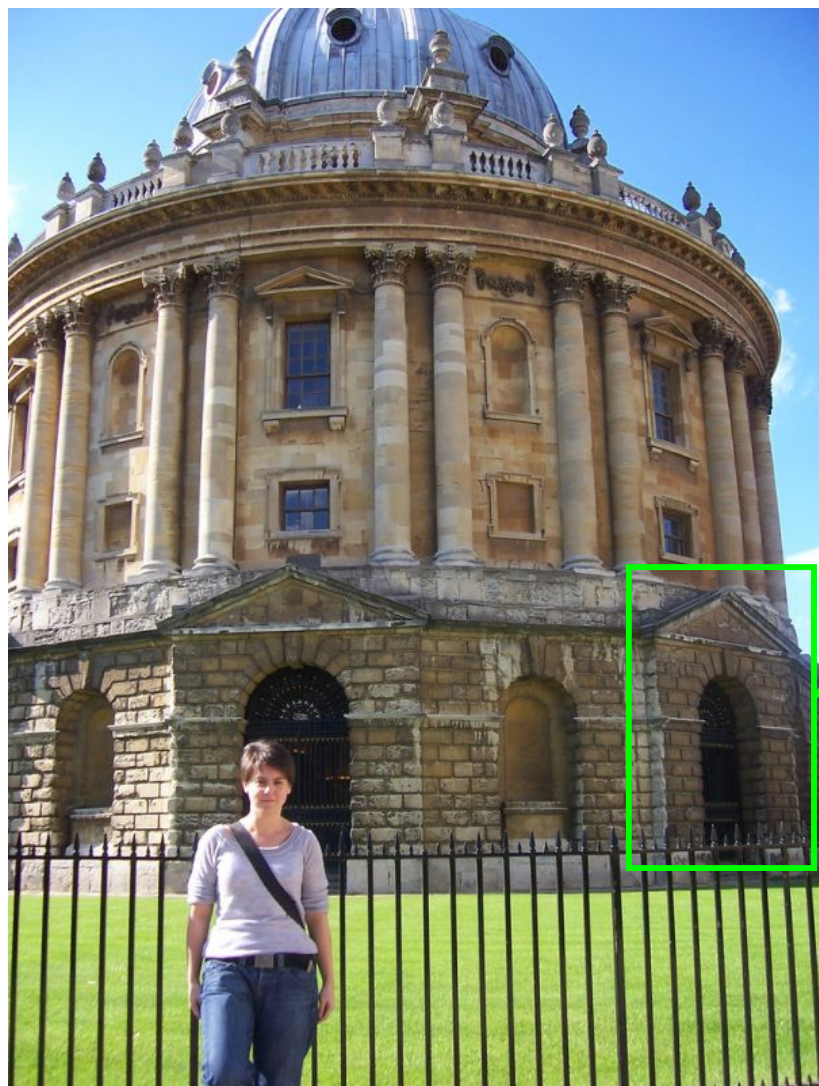
Γιάννης Αβρίθης  
Αθήνα, 20 Οκτωβρίου 2010

Do these images match?

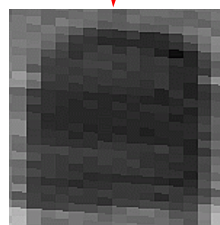
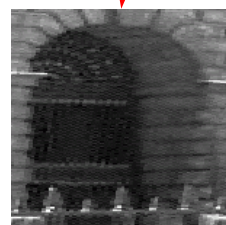




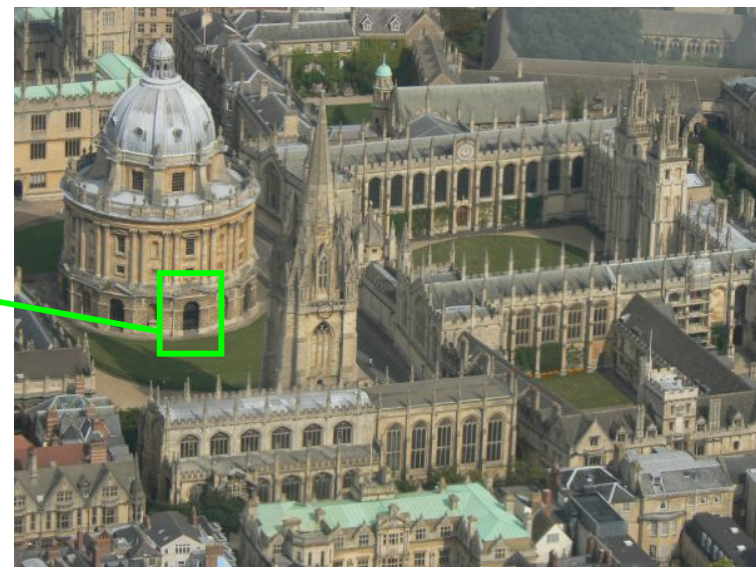
# Local features & descriptors



features



$[d_1 \dots d_M] \in \mathcal{D}$

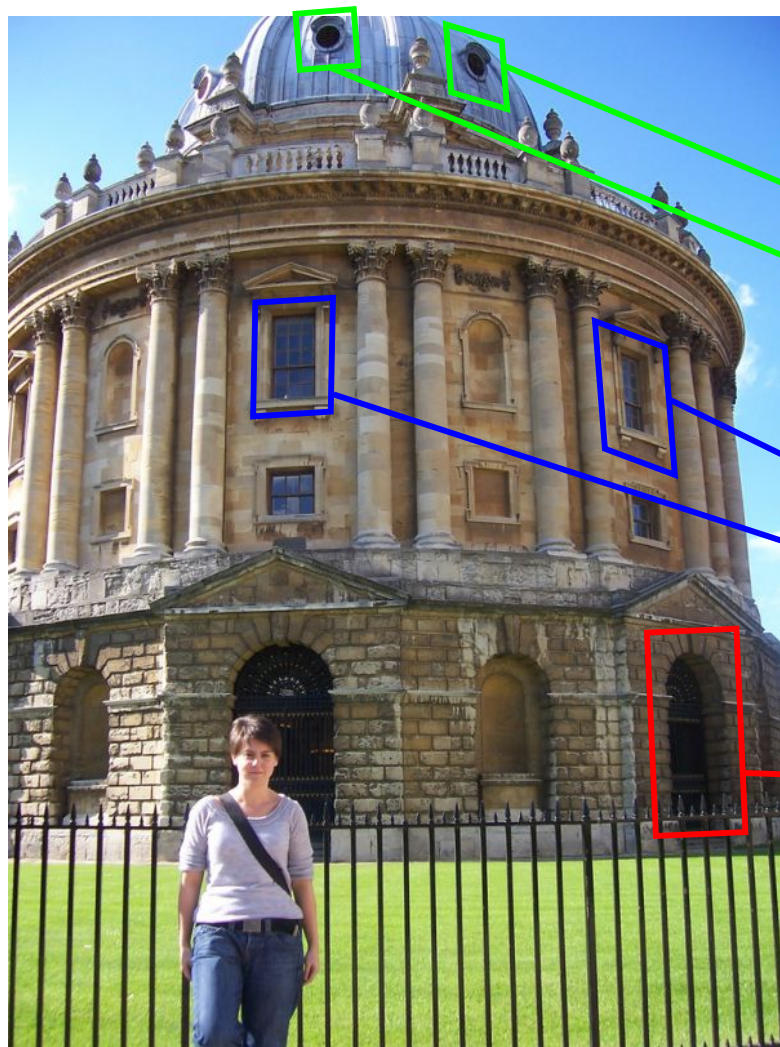


$[d'_1 \dots d'_M] \in \mathcal{D}$

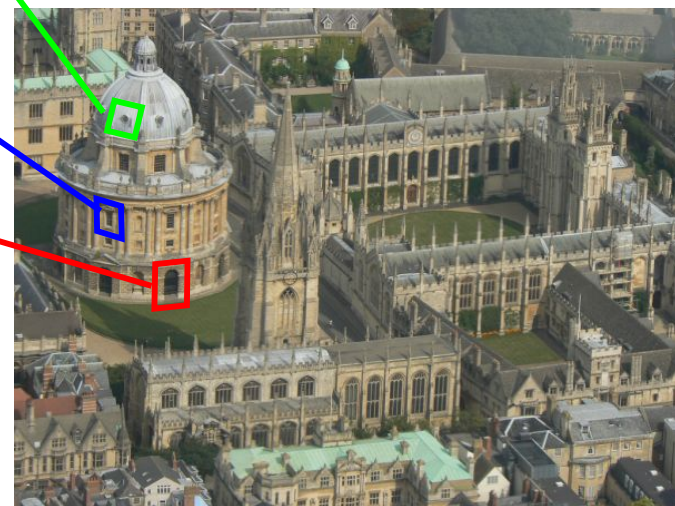
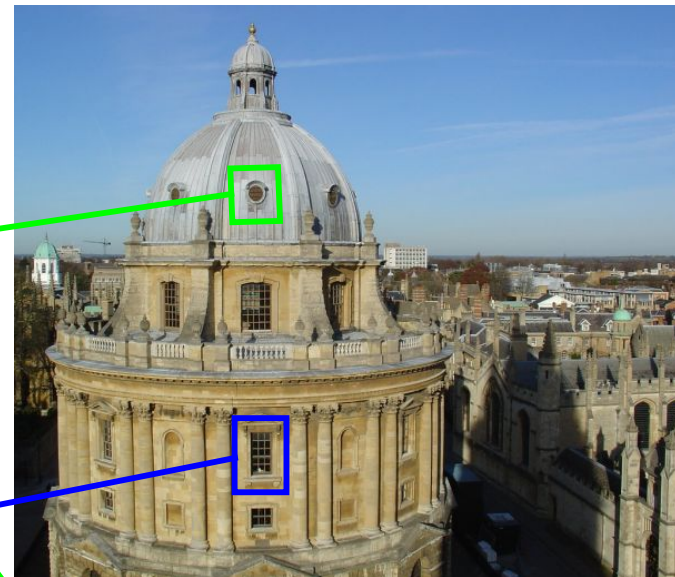
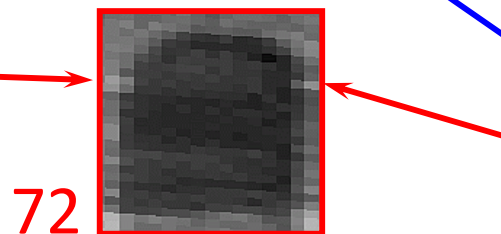
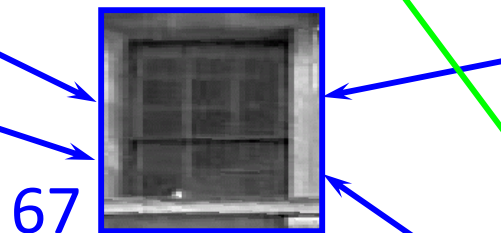
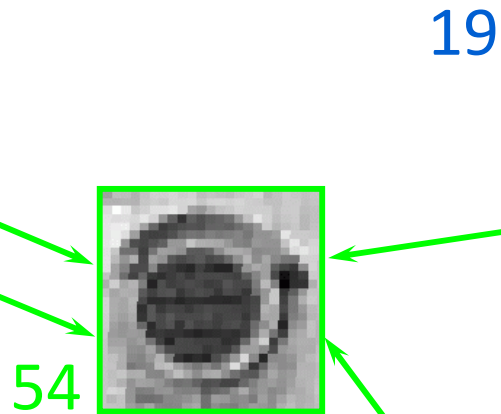
descriptors



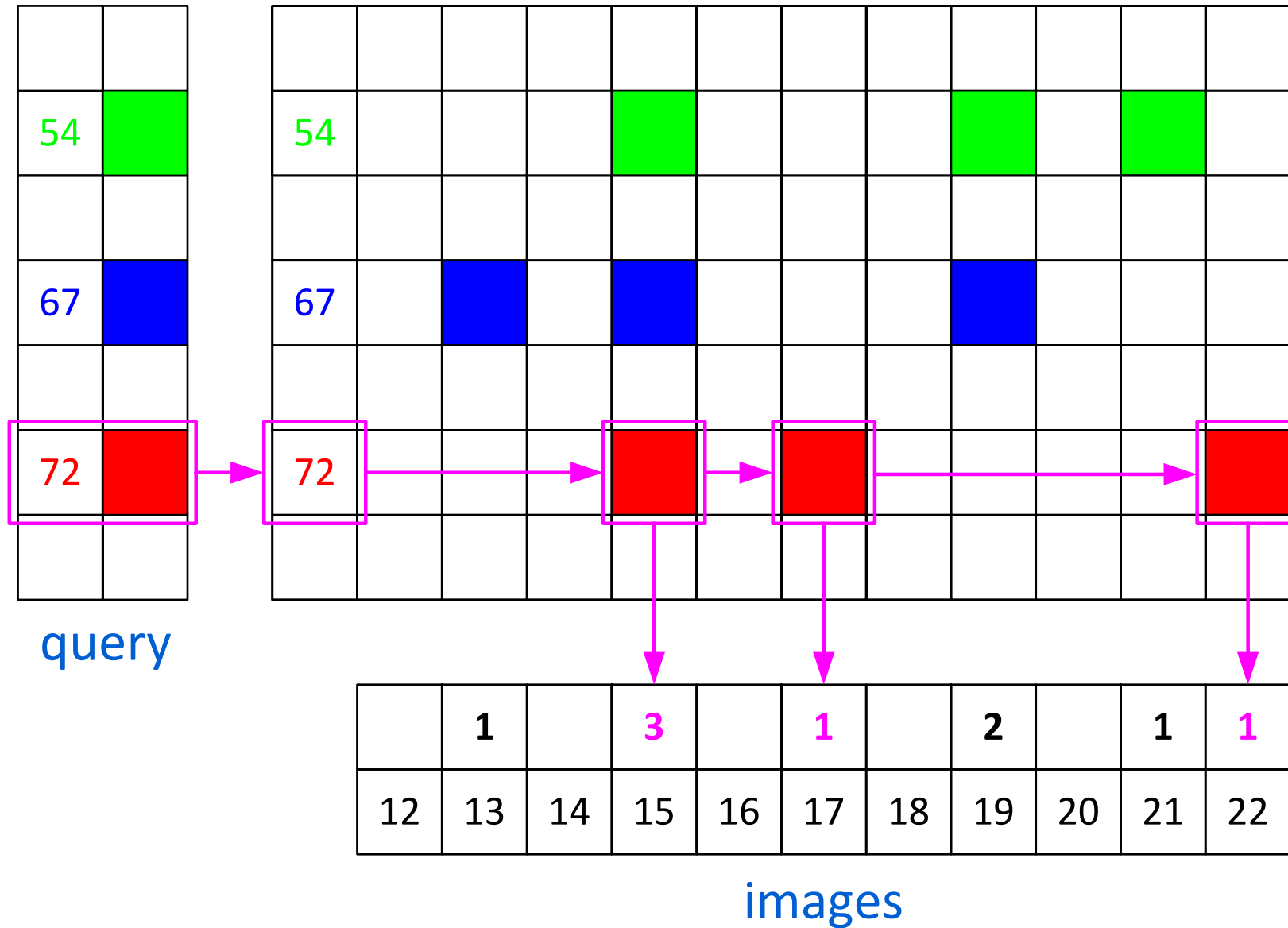
# Vocabulary



query



# Inverted file





# Spatial consistency

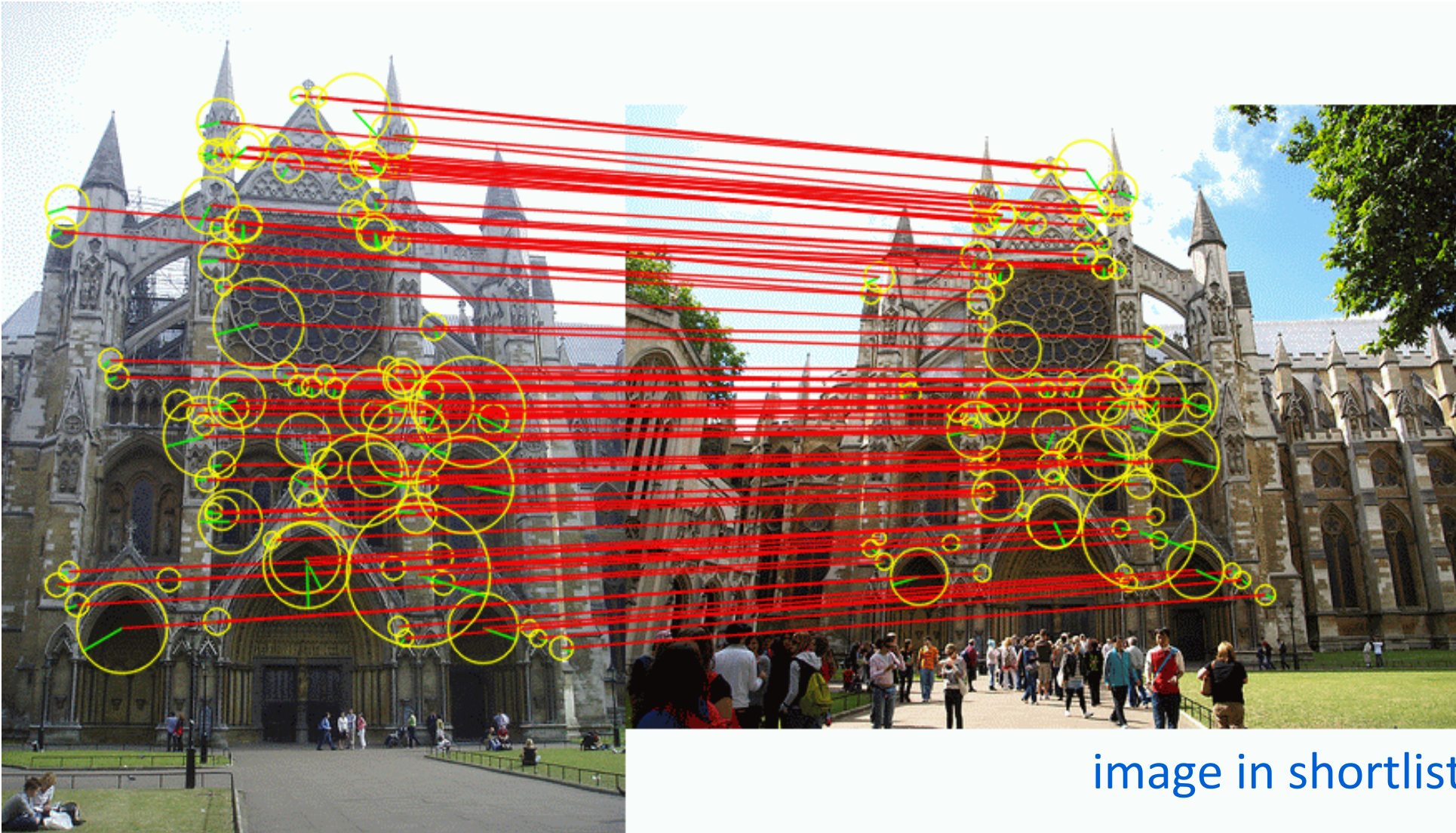


image in shortlist

query

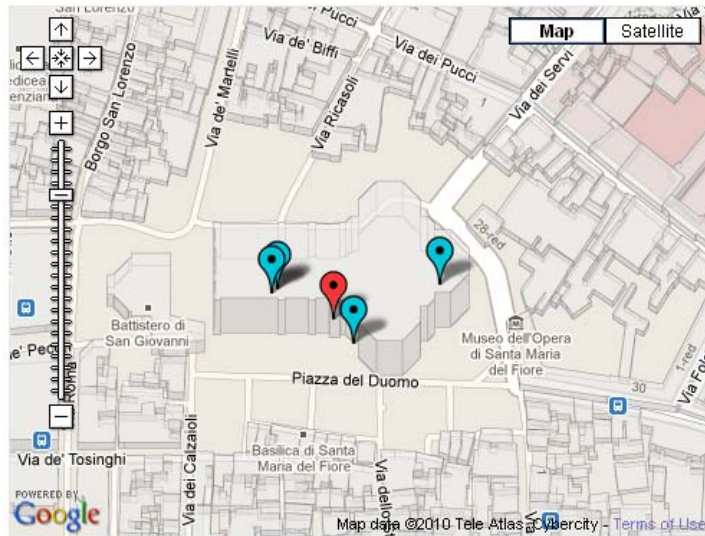


# http://viral.image.ntua.gr/

## Visual Image Retrieval and Localization

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Search (BETA)



**Suggested tags:** Florence Baptistery, Florence Cathedral, Florence  
**Frequent user tags:** Duomo, Church, architecture, detail, maliaC

### Similar Images



Similarity: 0.687  
Details Original ●●



Similarity: 0.645  
Details Original ●●



Similarity: 0.514  
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Similarity: 0.419  
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# Challenge: view point variation



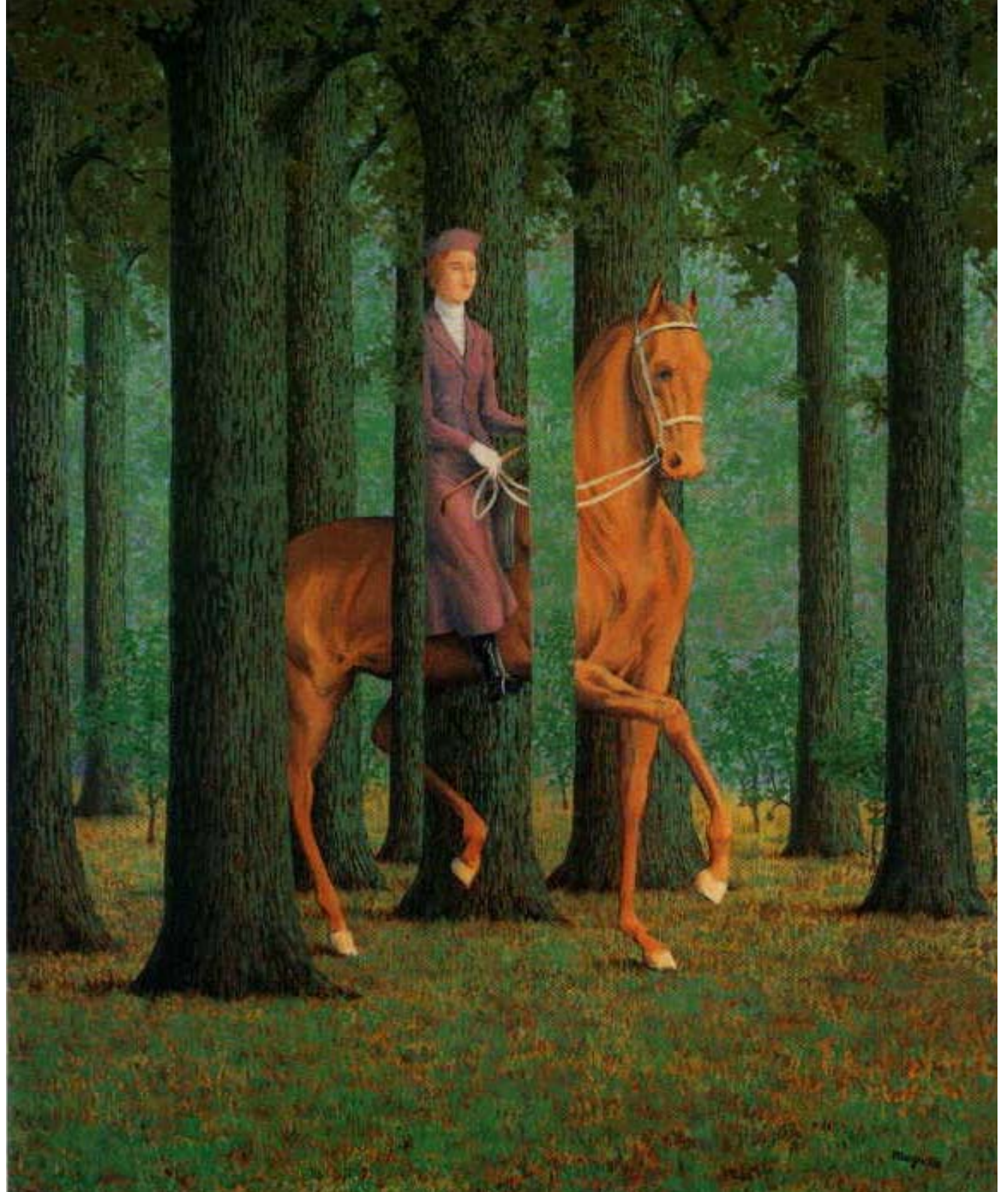
Slides from Antonio  
Torralba, 2007



## Challenge: illumination



# Challenge: occlusion

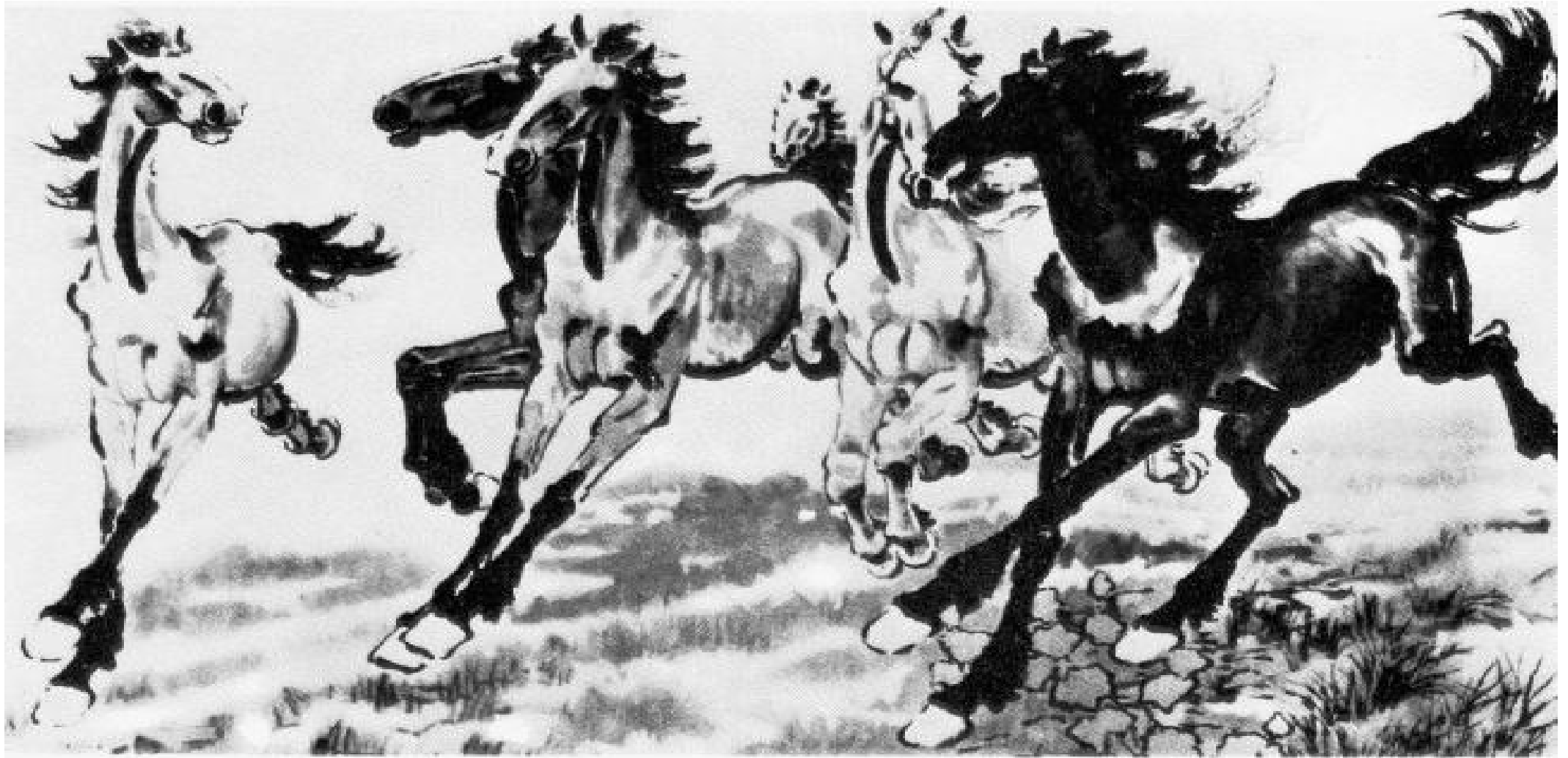




# Challenge: scale



# Challenge: deformation





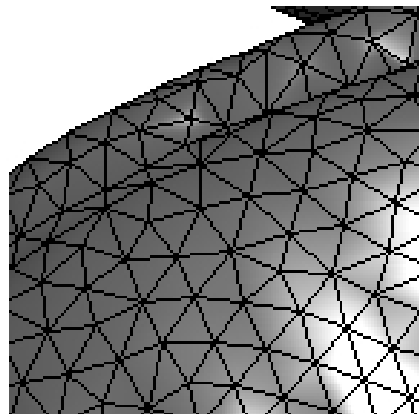
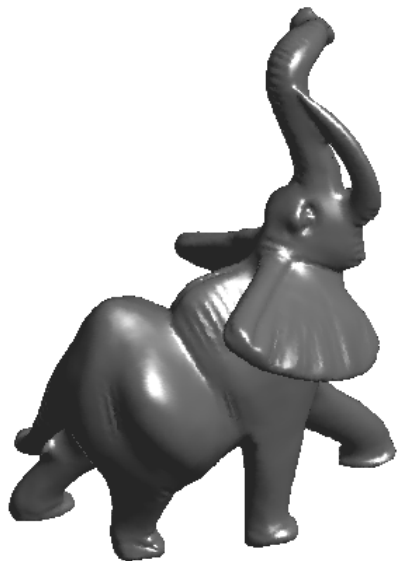
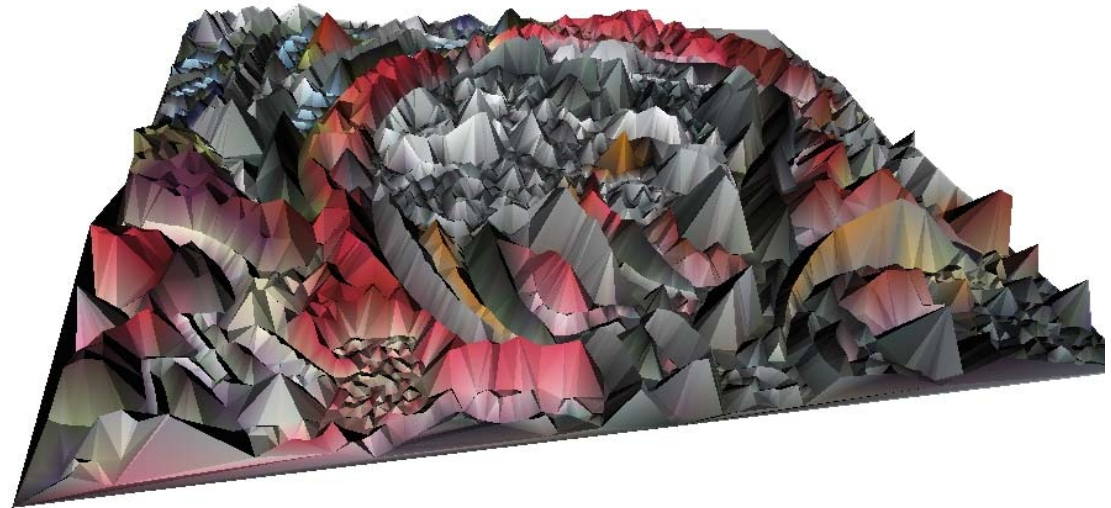
# Challenge: intra-class variation



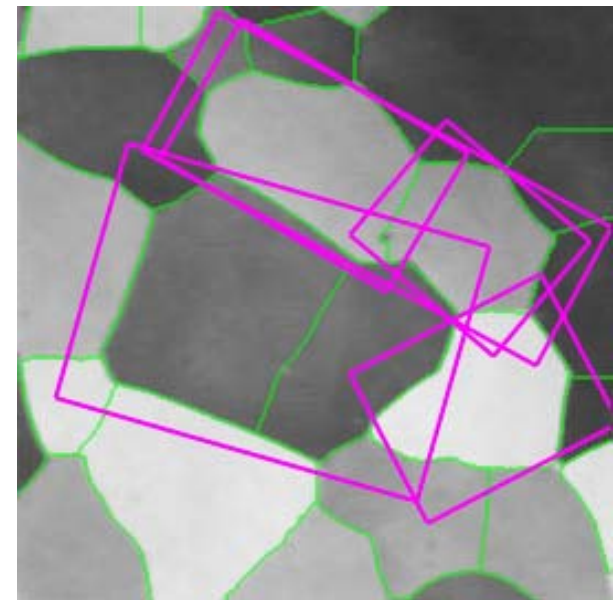
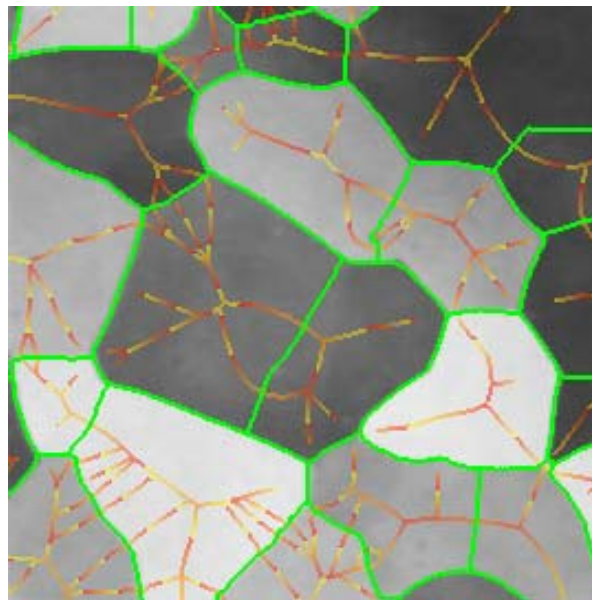
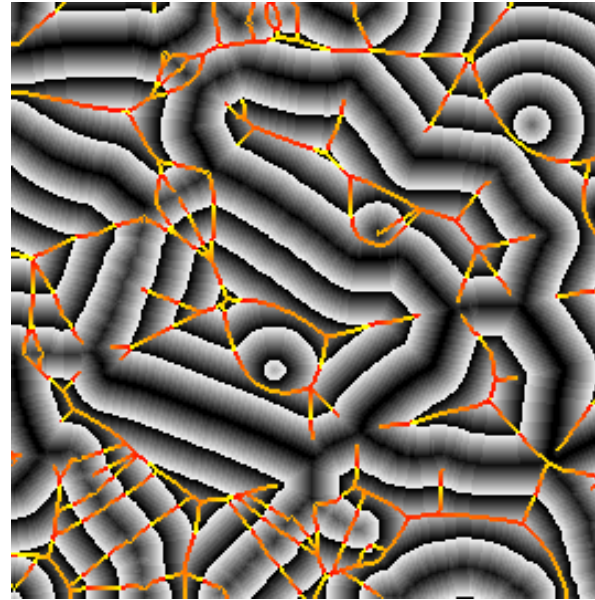
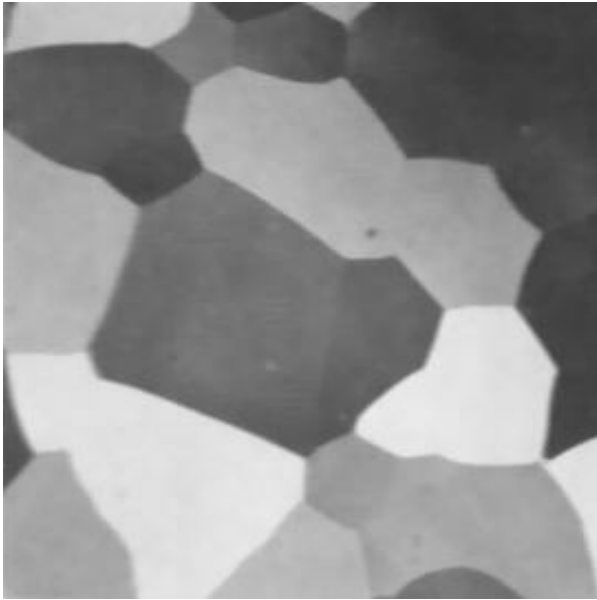
# Θέματα διπλωματικών εργασιών



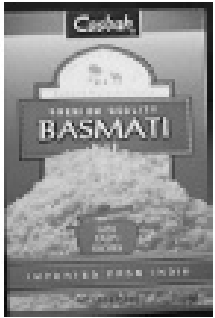
# 1. Ανίχνευση σημαντικών σημείων/περιοχών σε εικόνες με χρήση τεχνικών απλοποίησης πλέγματος



## 2. Ακμές, τοπικά χαρακτηριστικά, ή κατάτμηση; Μία ενοποιημένη προσέγγιση ανάλυσης εικόνων

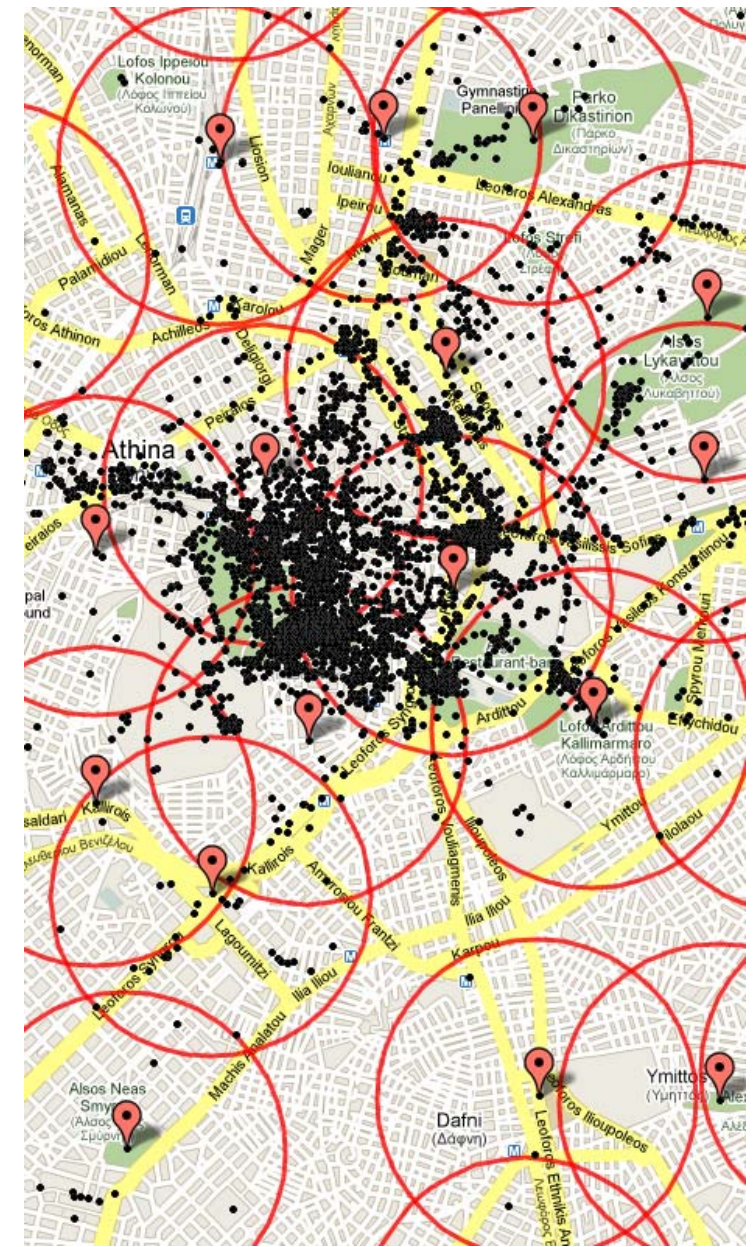
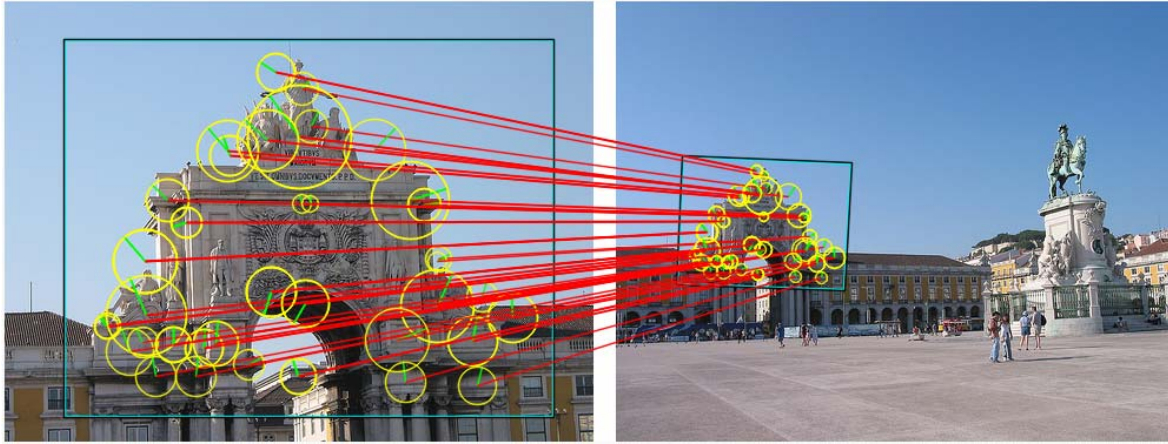


### 3. Γεωμετρικά κριτήρια στην αναζήτηση εικόνων

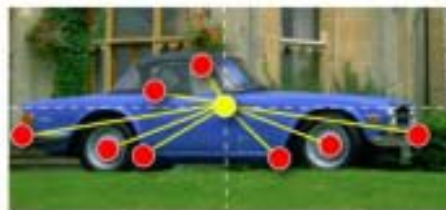
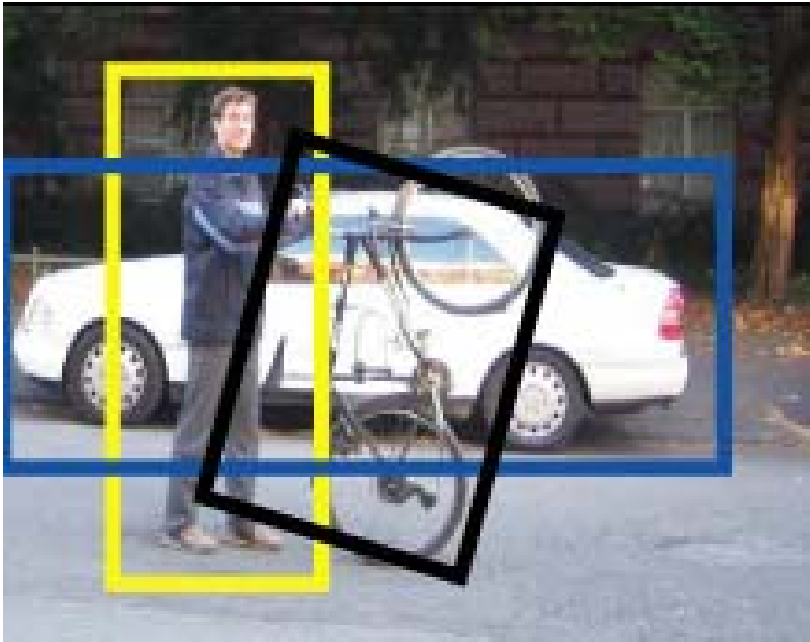




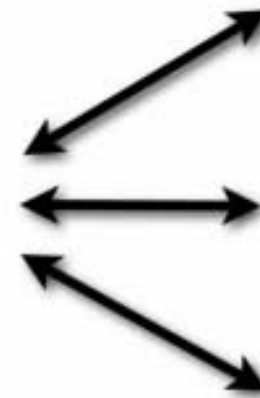
## 4. Αναγνώριση τοποθεσίας μέσω οπτικής αναζήτησης εικόνων



## 5. Ανίχνευση αντικειμένων σε εικόνες και γεωμετρικοί μετασχηματισμοί



hypothesis



⋮

support vectors

<http://image.ntua.gr/iva/>