Recognition and Localization Based on Local and Global Maps

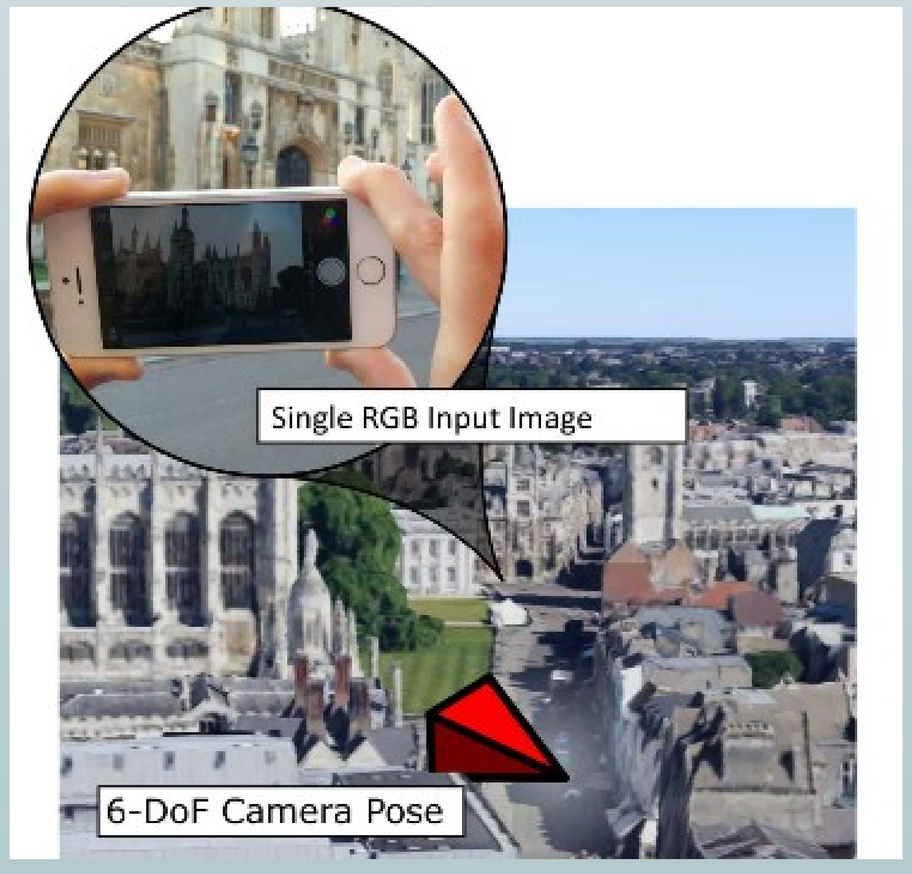
Student name : Achref ELouni
Supervised by : Michel Dhome ,Eric royer , Marc chevaldonne

Institut Pascal

Ecole doctorale
Sciences Pour
l'Ingénieur

Introduction

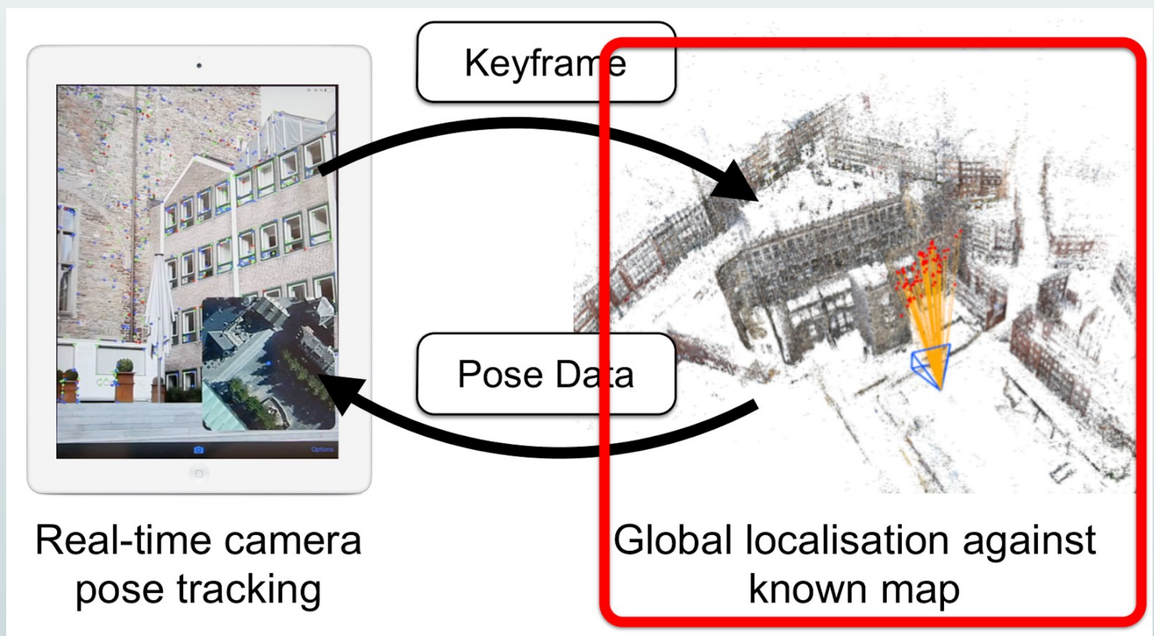
Visual-Based Localization (VBL) consists of retrieving the pose (position + orientation) of a visual query material within a known space representation. For instance, recovering the pose of a camera that took a given photography according to a set of geo-localized images or a 3D model is a simple illustration of such a localization system.



Methods

- Indirect VBL Methods[1]
  - Methods based on Key-point
  - Methods based on CNN
- Direct VBL Methods[2,3]
  - Methods based on Key-point
  - Methods based on CNN

Results



Conclusions

Two families of methods[1,2,3] have been explained to highlight the current capabilities of existing localization systems and to address the remaining challenges in the domain.

Bibliography

[1] Arandjelović, R., Zisserman, A., 2012. Three things everyone should know to improve object retrieval. Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR) (April), 2911–2918

[2] Arandjelović, R., Zisserman, A., 2013. All About VLAD. Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR),

[3] Arandjelović, R., Zisserman, A., 2014. DisLocation : Scalable descriptor. In: Proceedings of the Asian Conference on Computer Vision (ACCV)