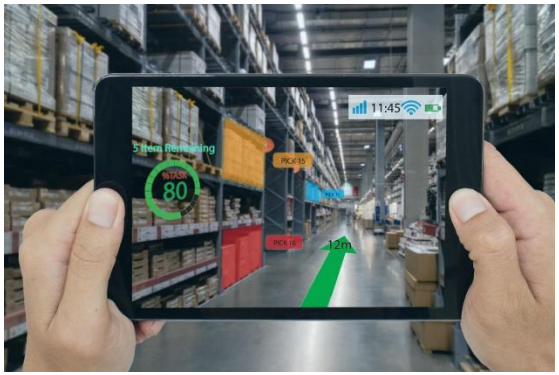
카메라 위치 파악을 위한 복셀 표현의 Covisibility 기반 참조 이미지 클러스터링

- Visual Localization, 계층적 구조의 최신 기술

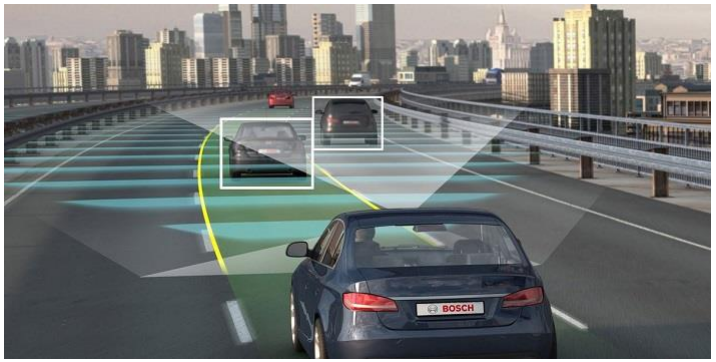
Computer Vision & Augmented Reality 연구실
학부연구생 강 준 구

OverView

- Visual Localization



Augmented Reality



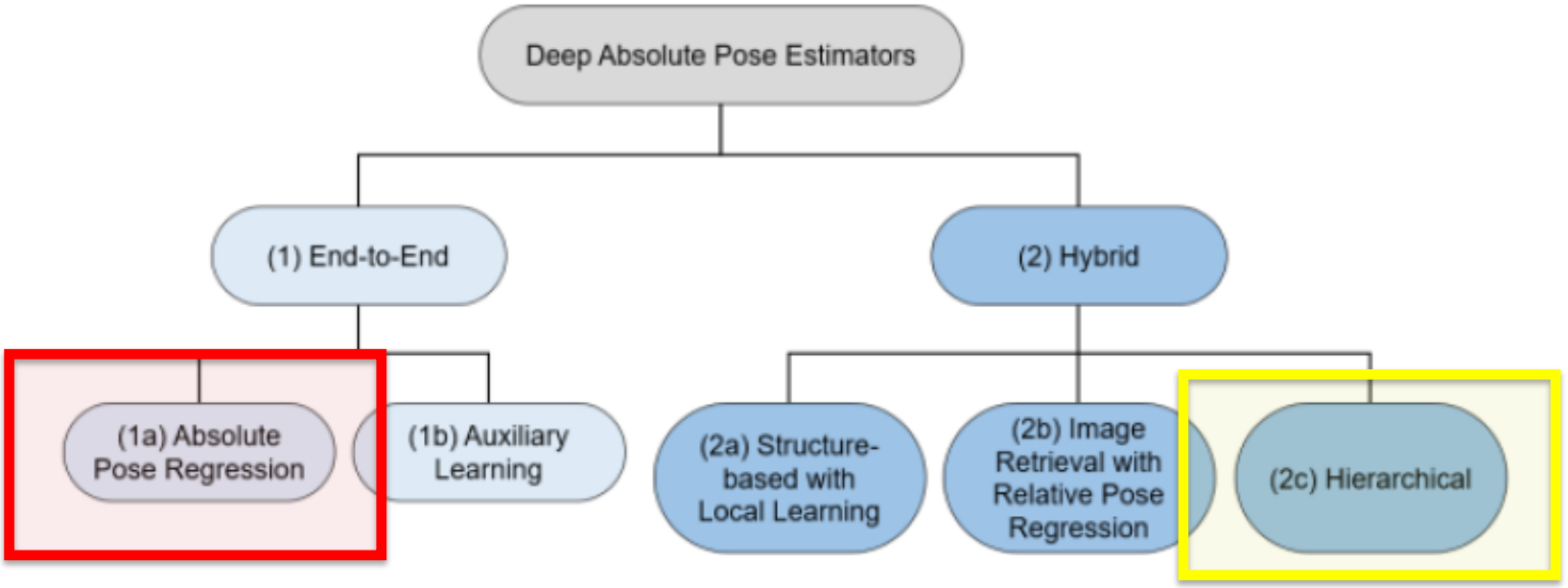
Autonomous Driving

Robotics

Contents

OverView

- Pose Estimation methods



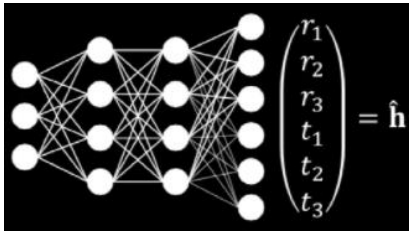
OverView

- PoseNet
  - Absolute Pose Regression

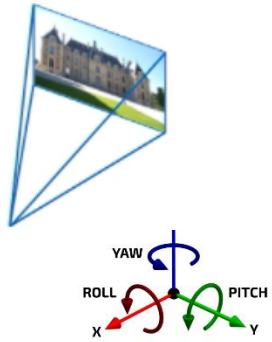
Taking 5ms to run

2m and 6degrees accuracy

Input Image
224x224 RGB image



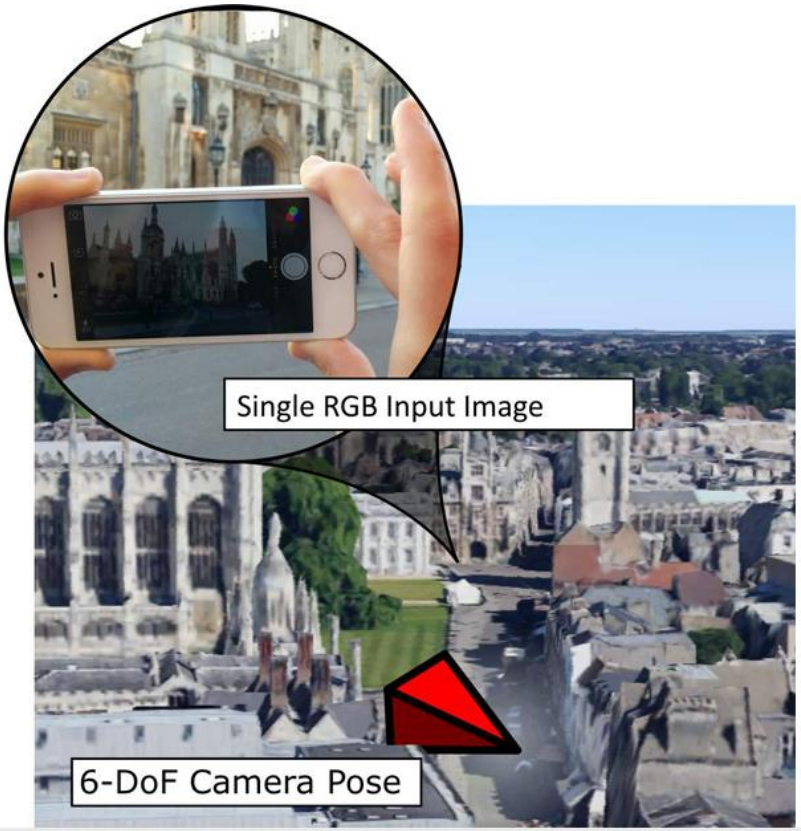
CNN



6 DOF pose
Six degrees of freedom monocular

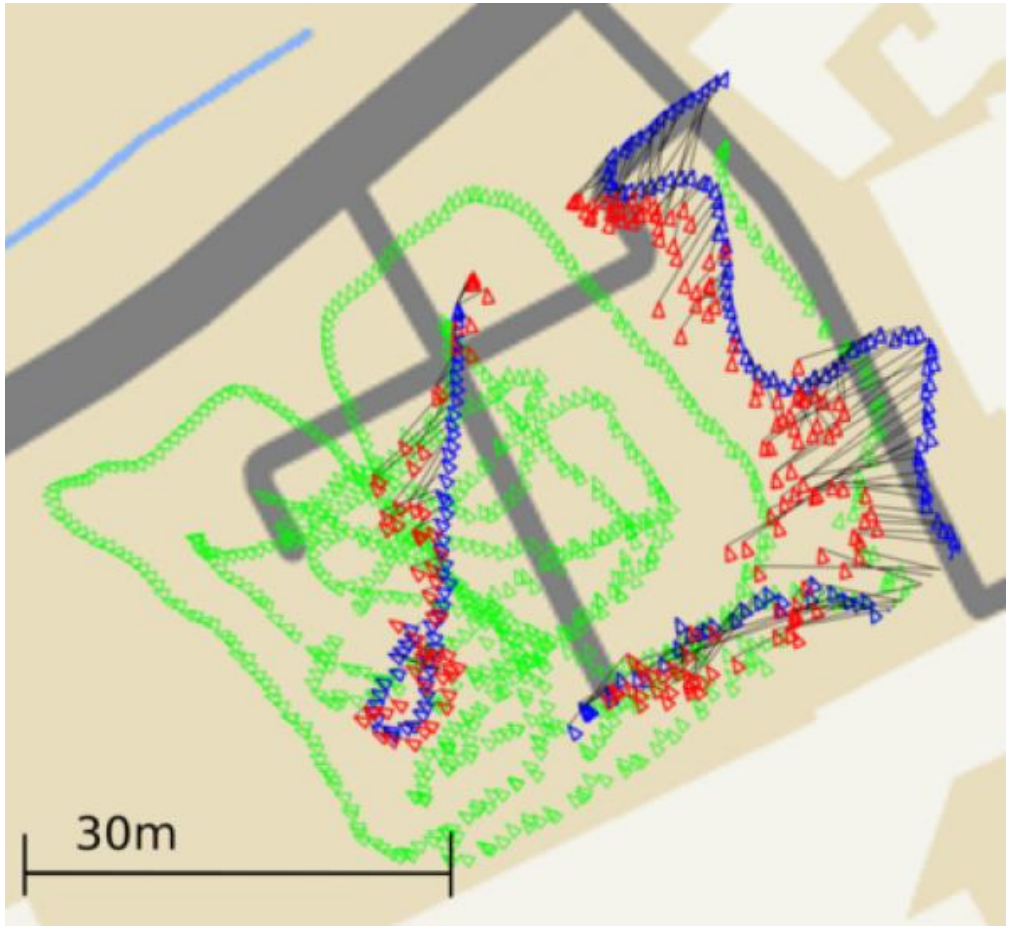
OverView

- PoseNet



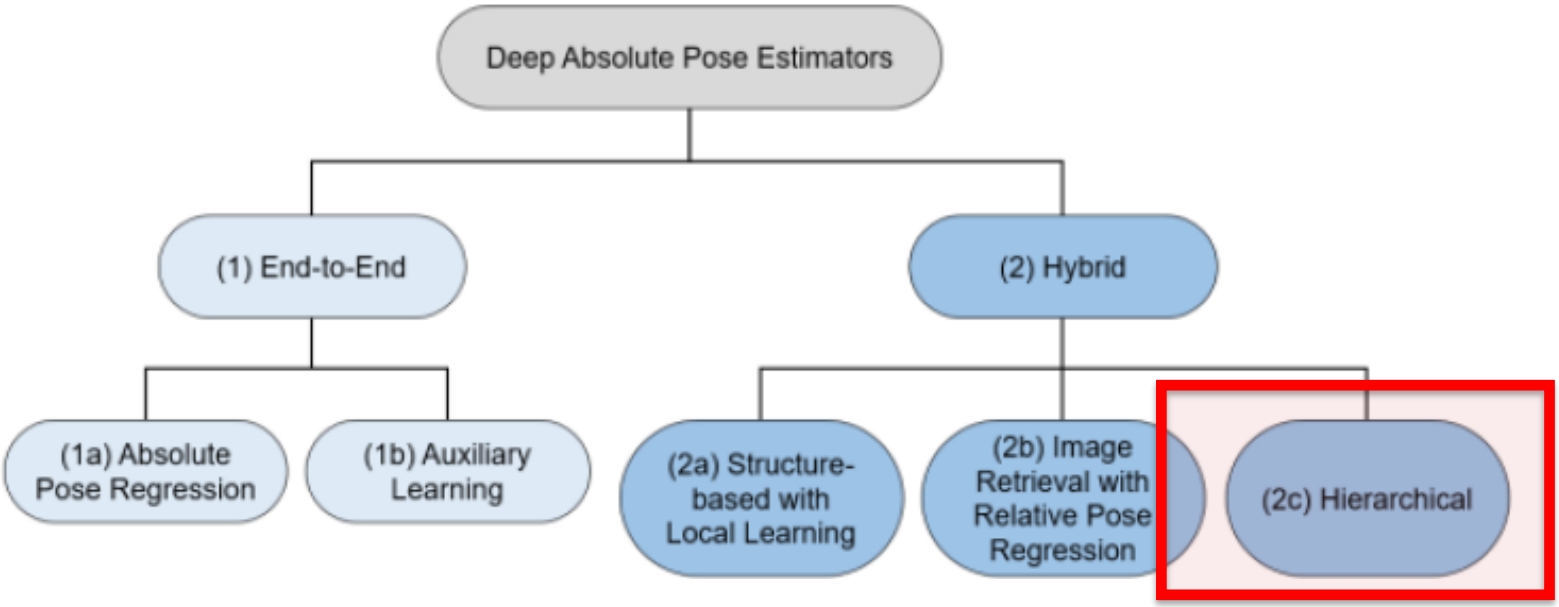
OverView

- PoseNet



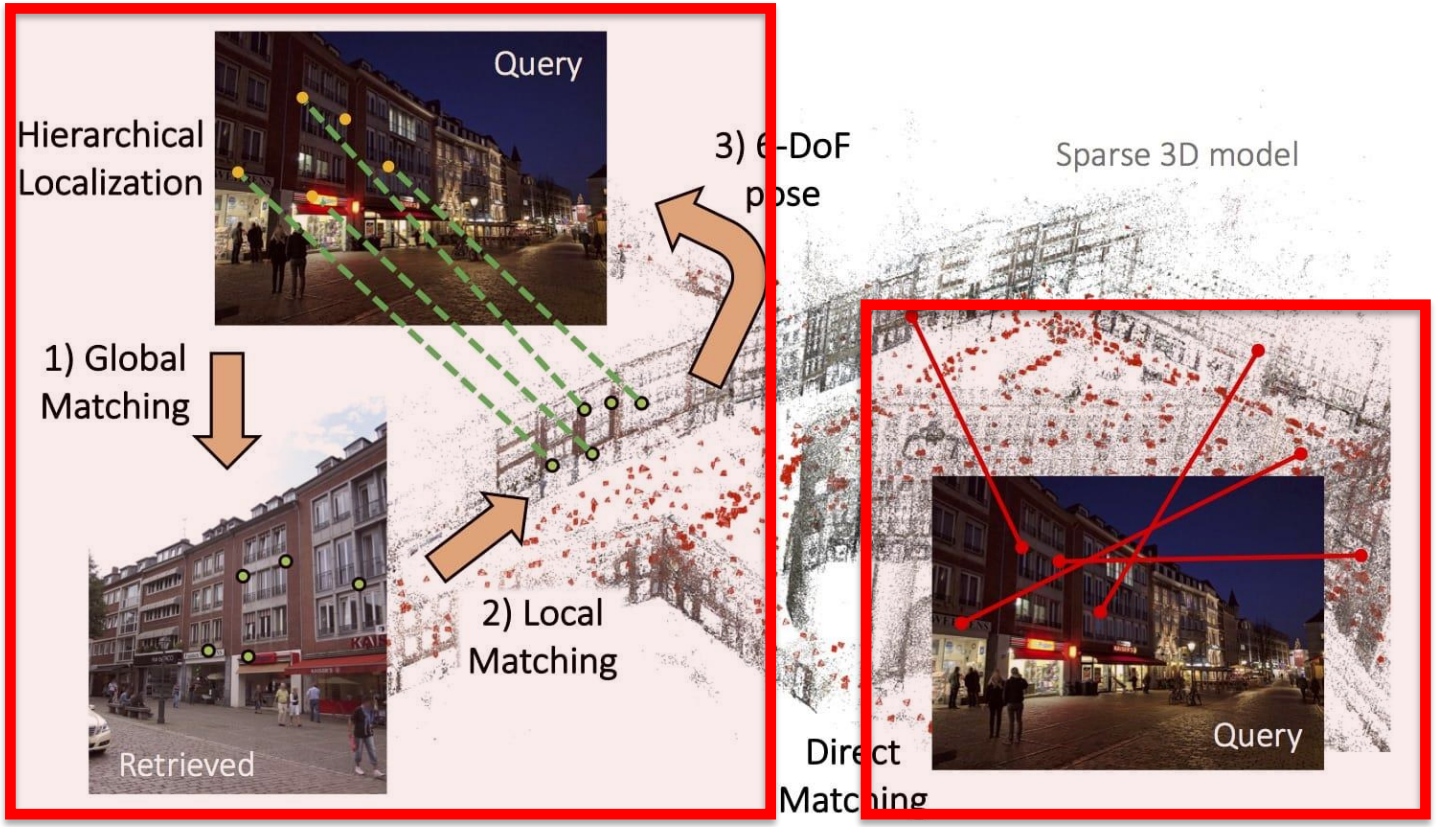
OverView

- Current methods for Pose Regression



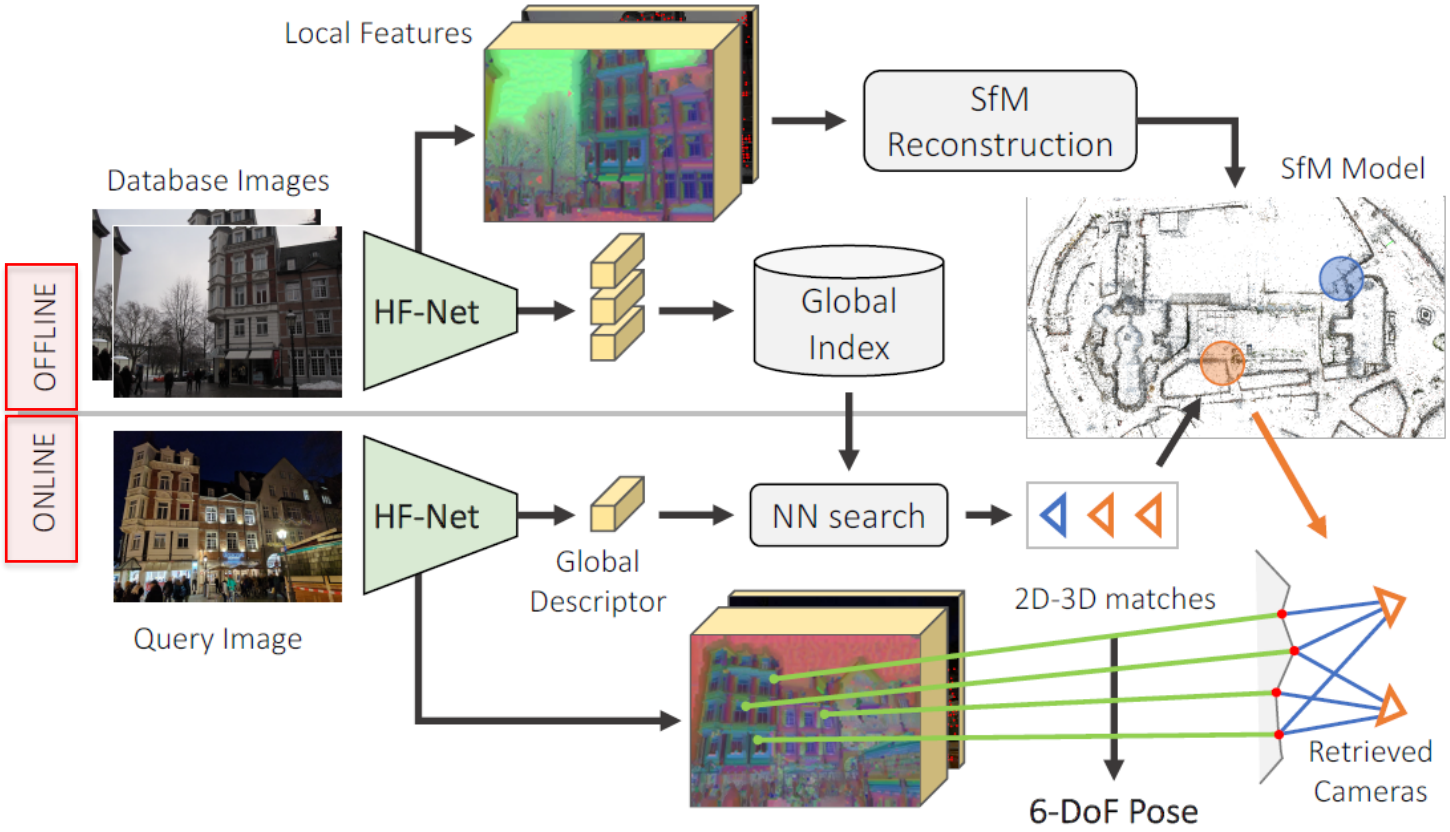
Overview

- Hierarchical



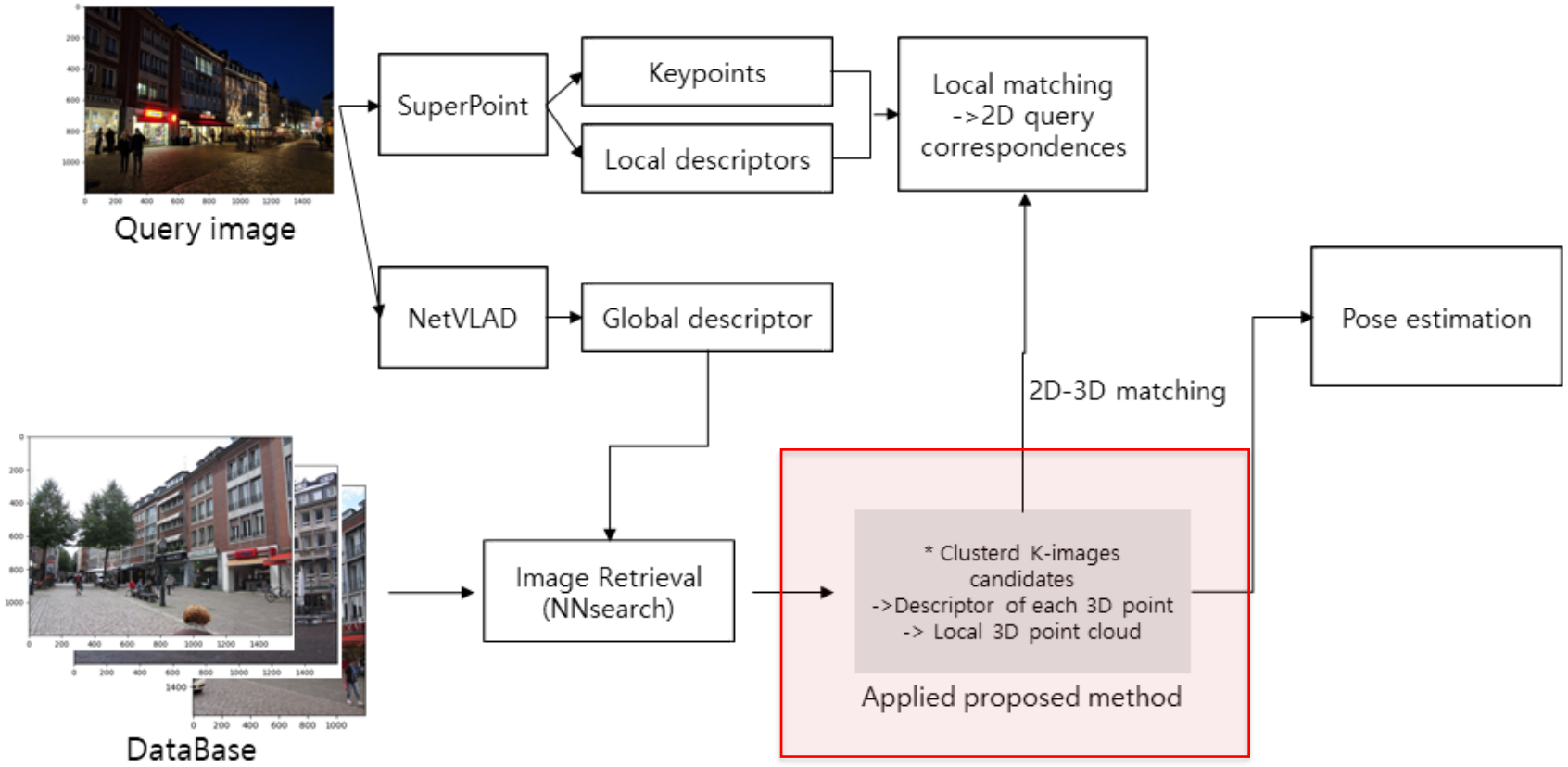
OverView

- Hierarchical



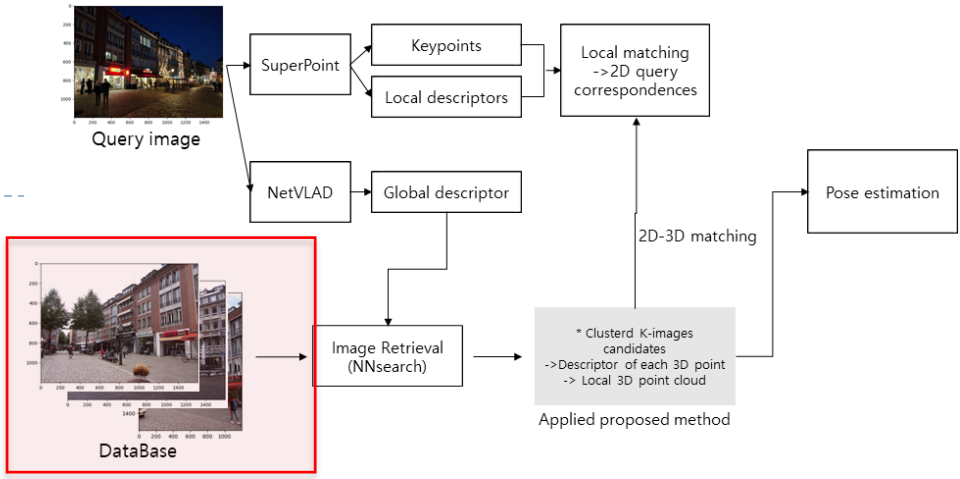
OverView

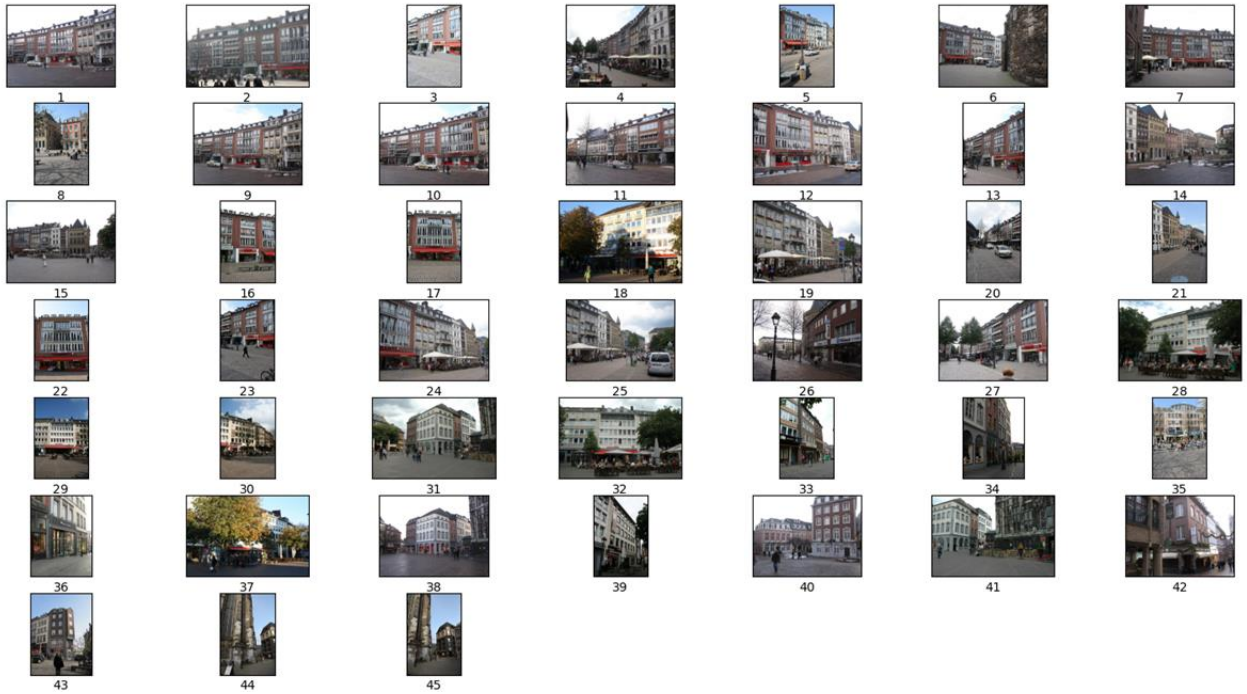
- Proposed method



Proposed Method

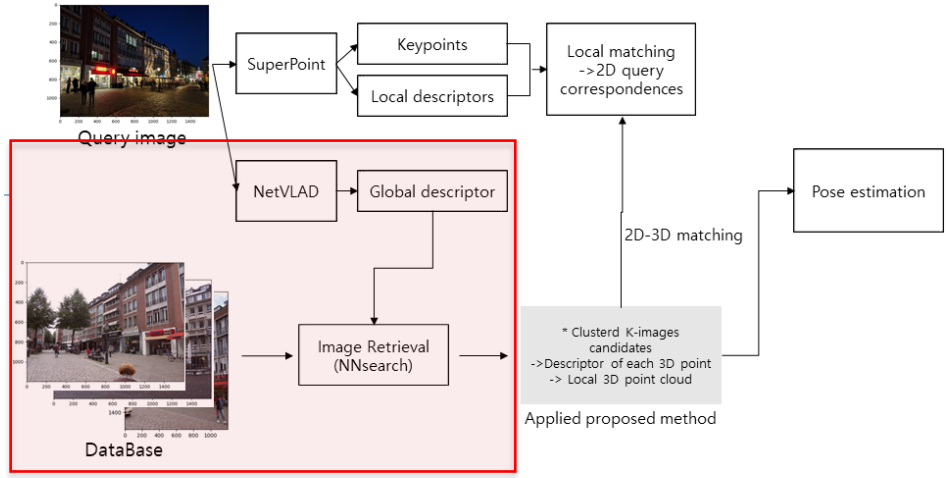
- Data Base
  - Aachen Day-Night 데이터셋
  - 4,328개
    - Day : 824, Night : 98

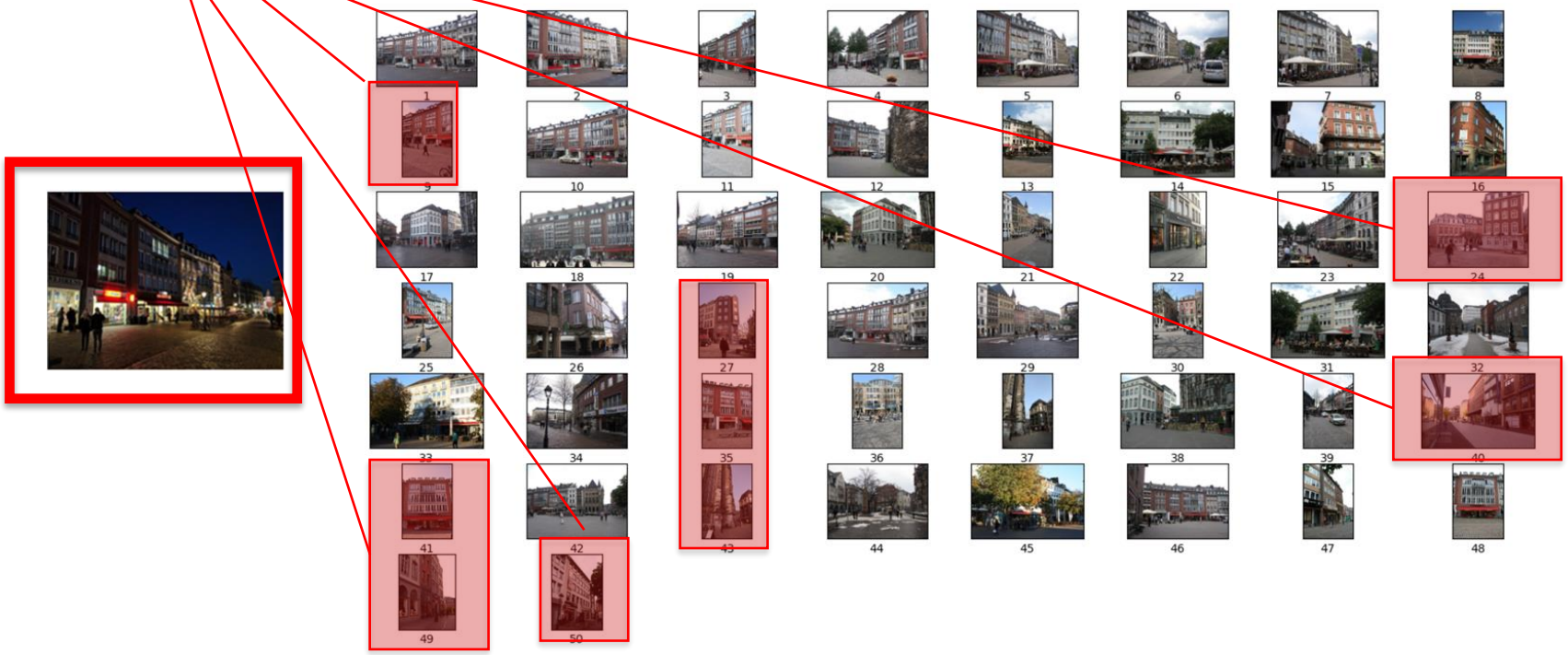




Global descriptor

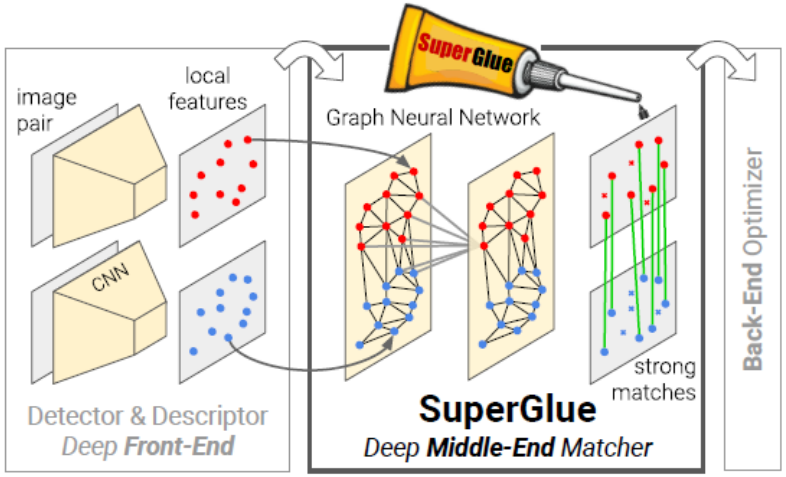
- NetVLAD

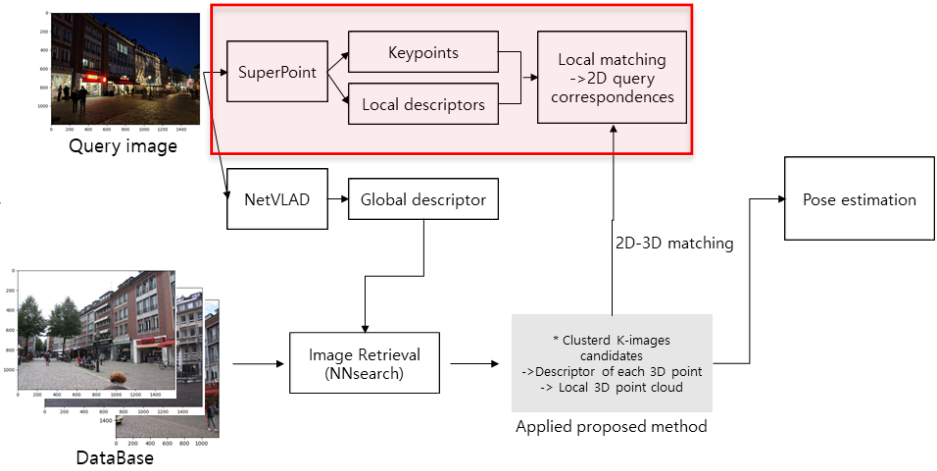


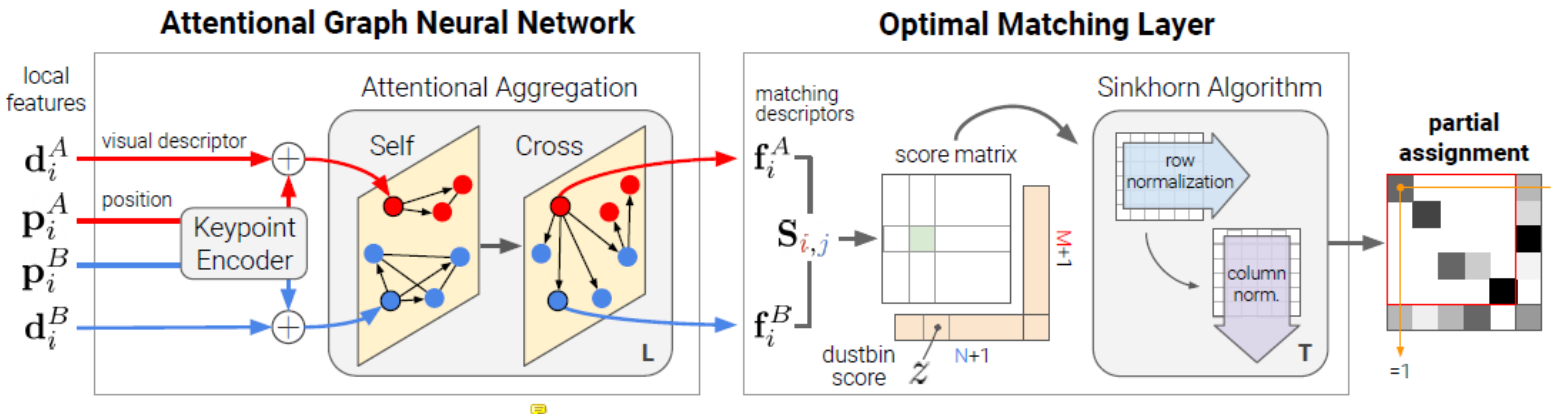


Local descriptor

- SuperPoint+SuperGlue

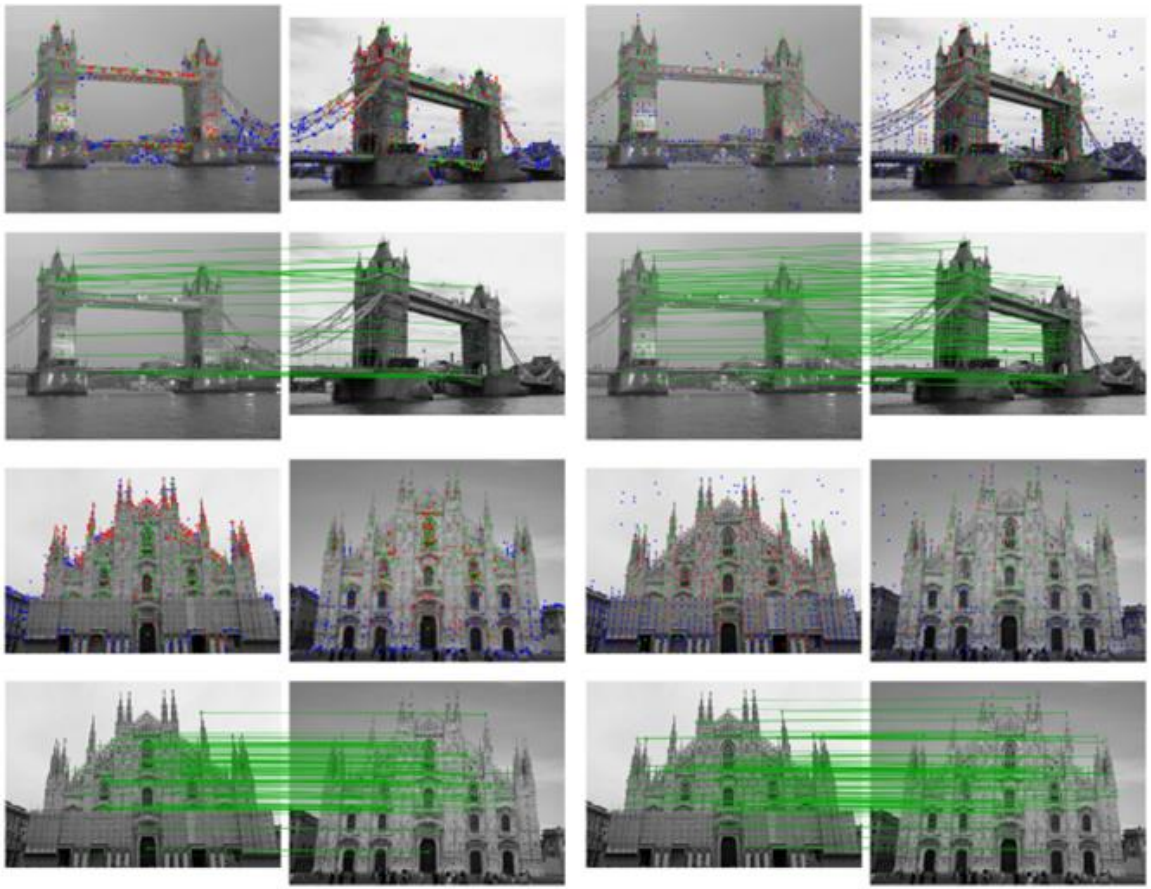


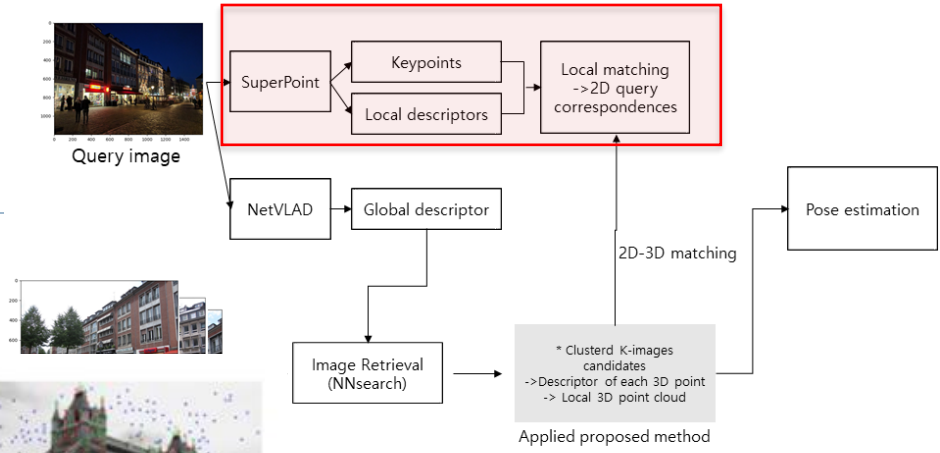




Local Matching

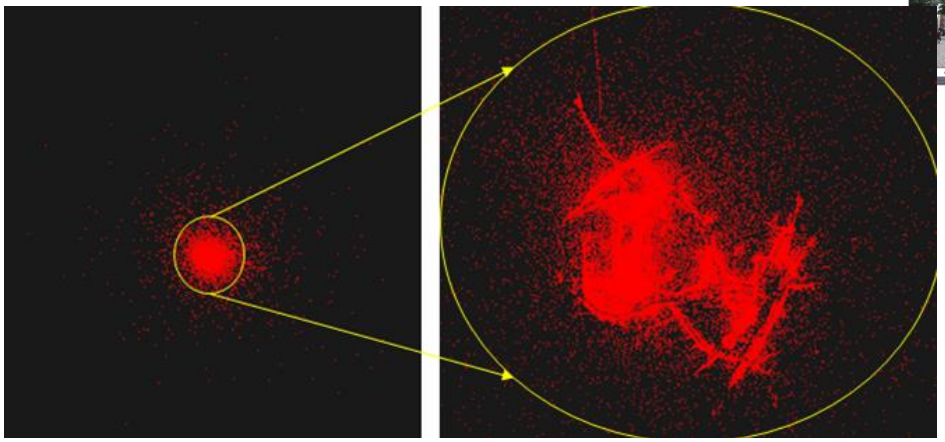
- SuperPoint and SuperGlue

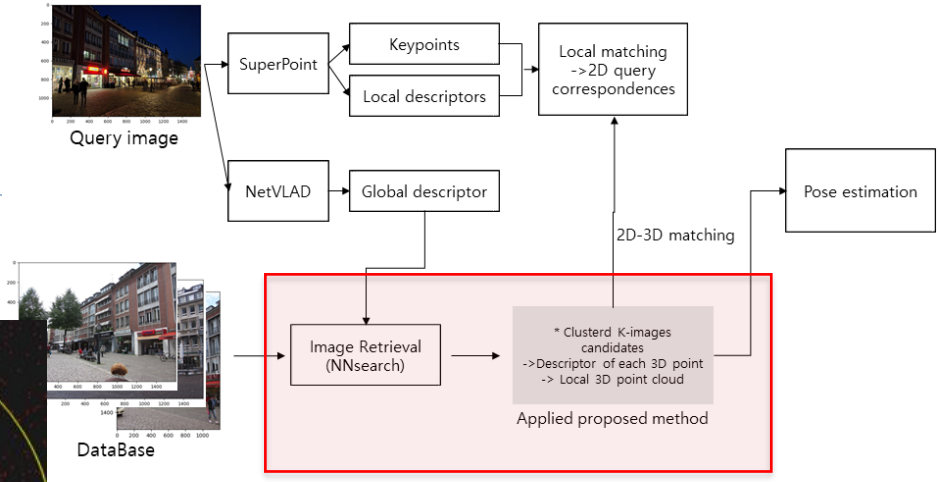


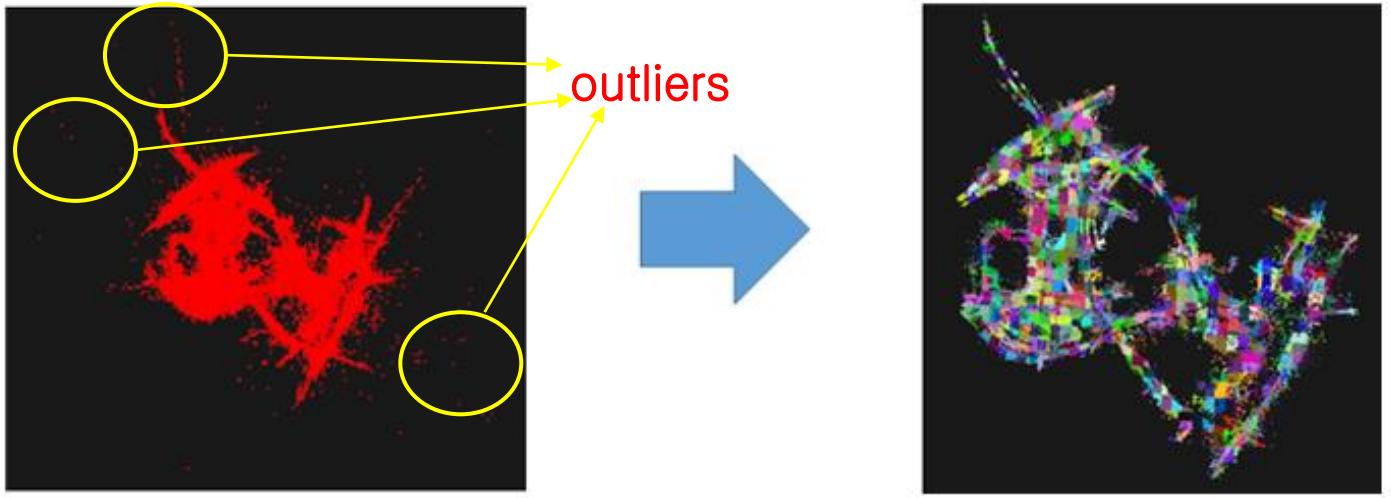


Proposed Method

- Voxel

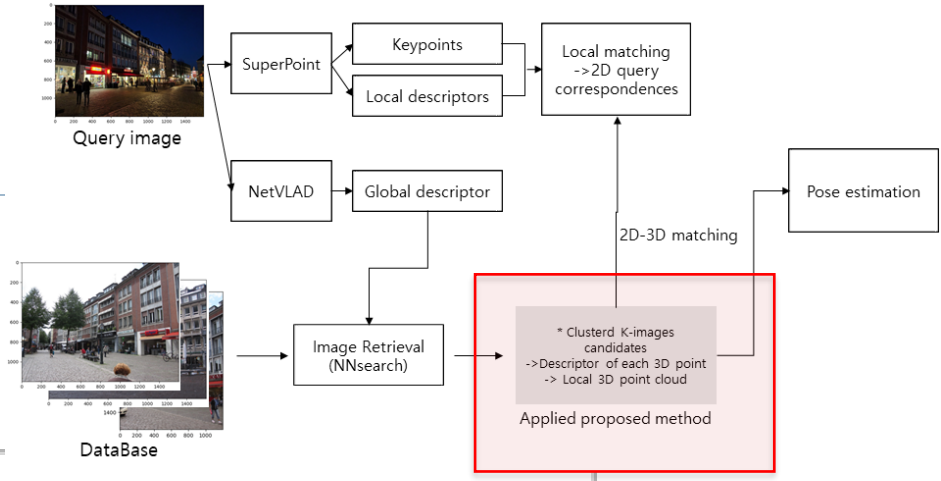


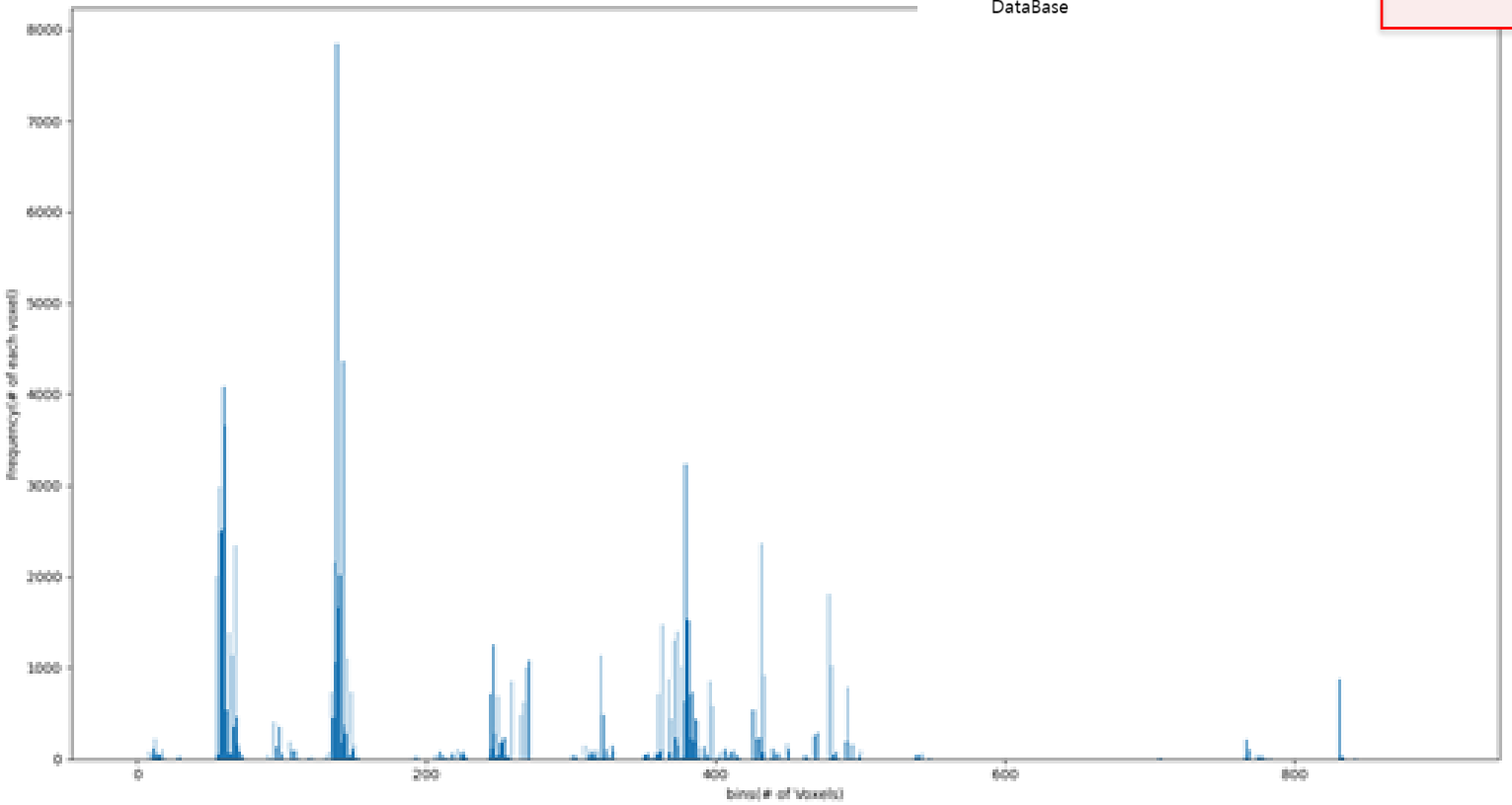




Proposed Method

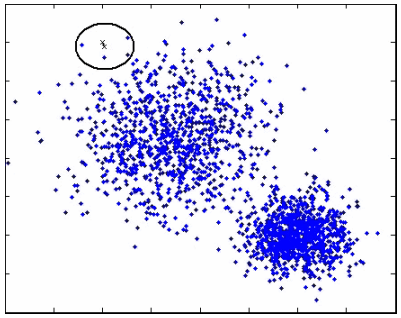
- Histogram

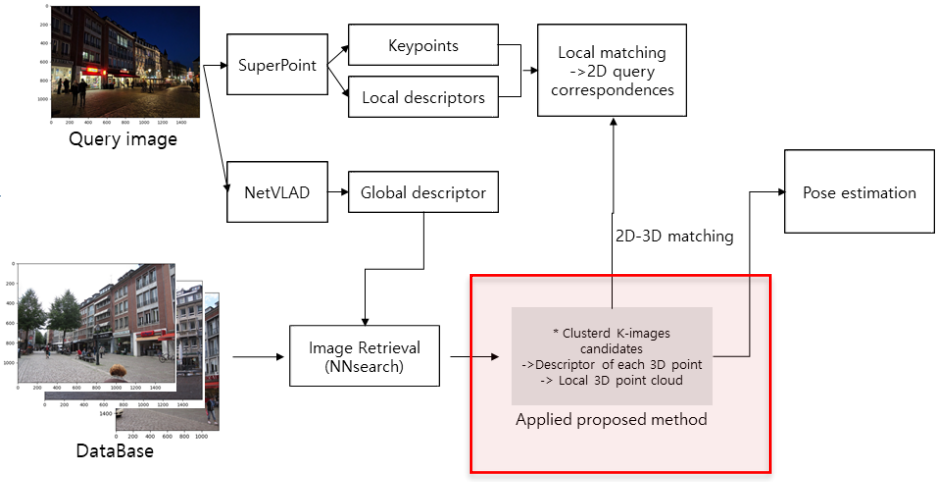


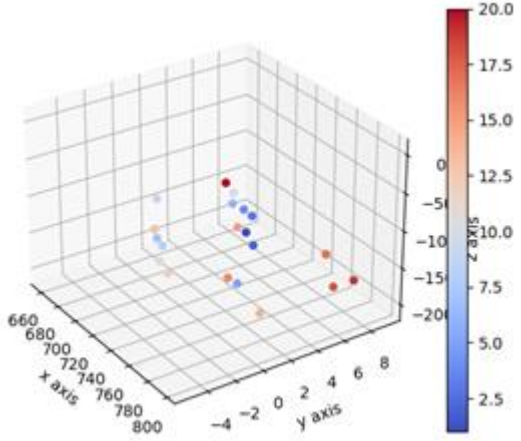


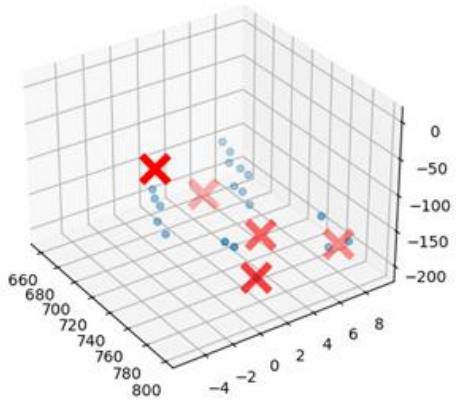
Proposed Method

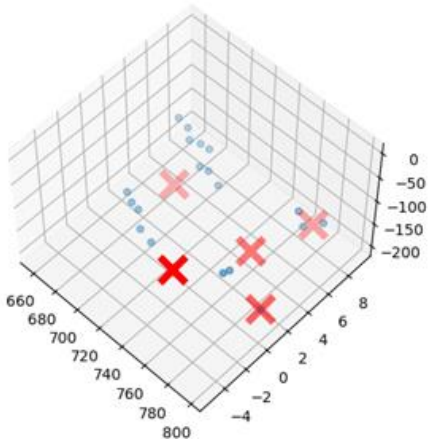
- MeanShift





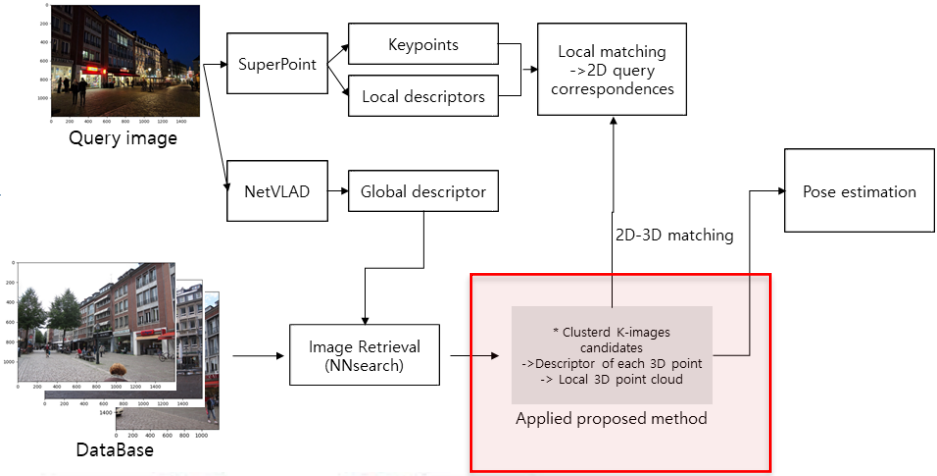






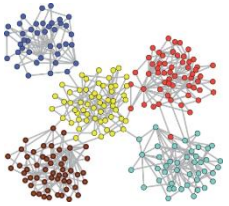
Proposed Method

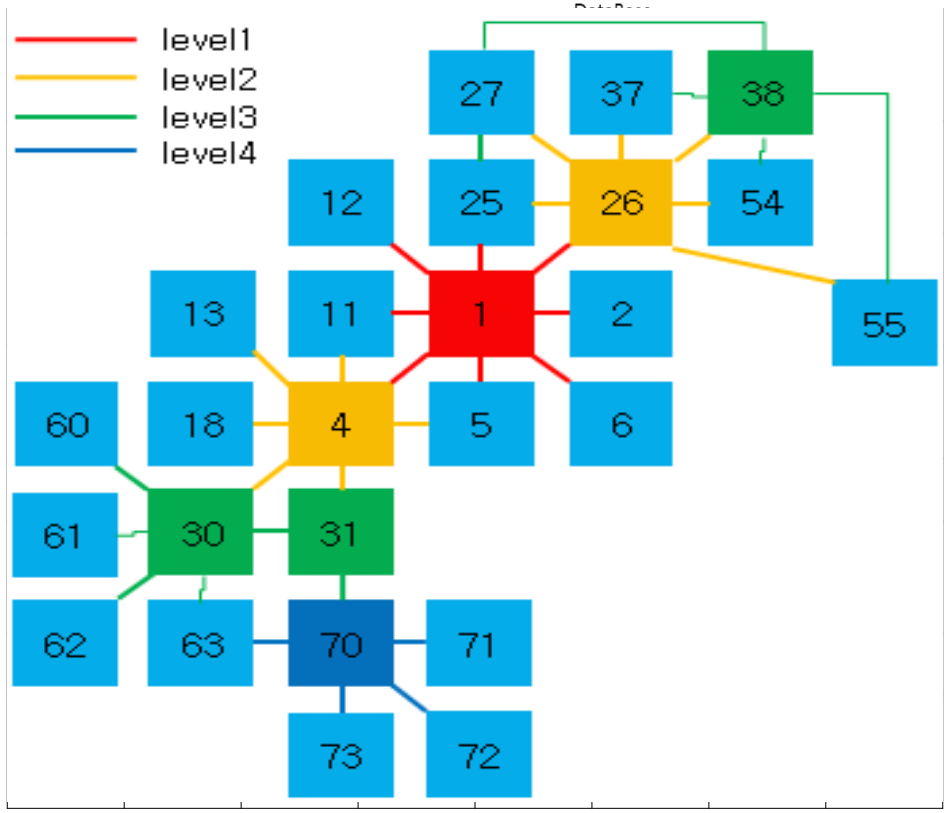
- MeanShift
  - 45->24

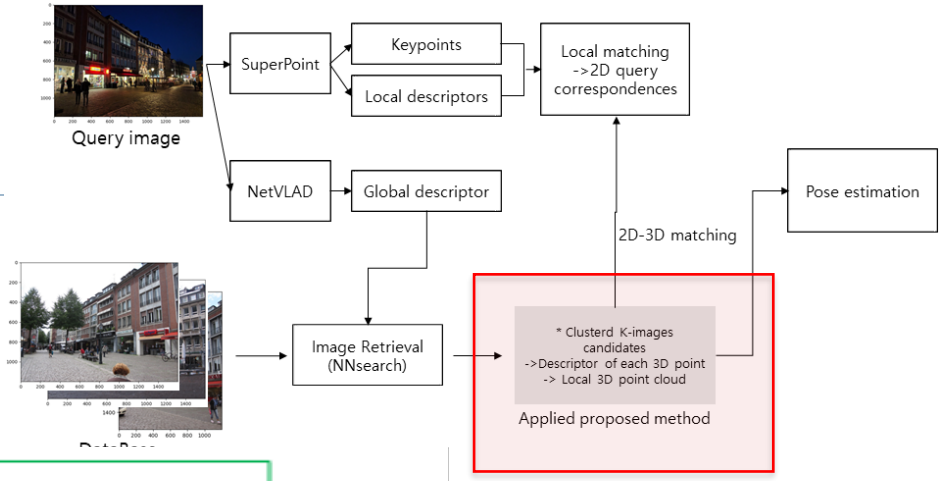


Proposed Method

- Graph Clustering

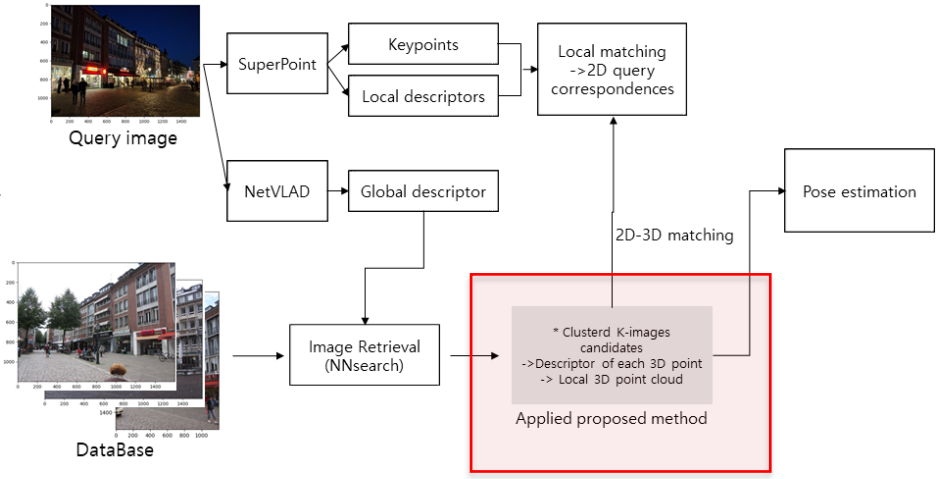


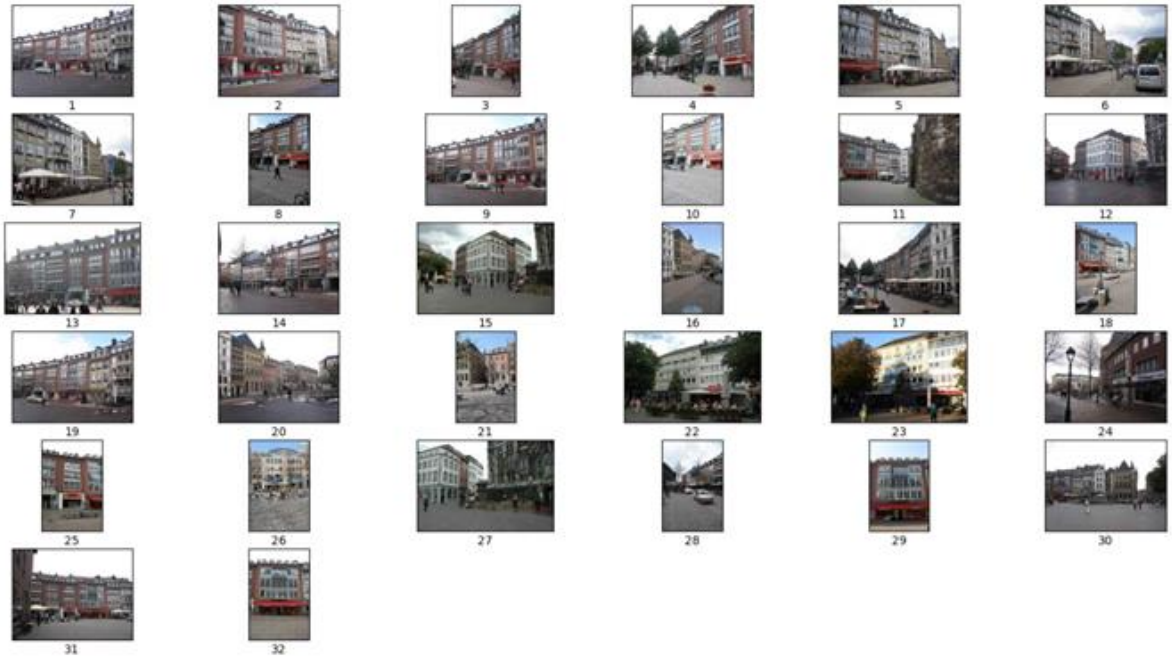




Proposed Method

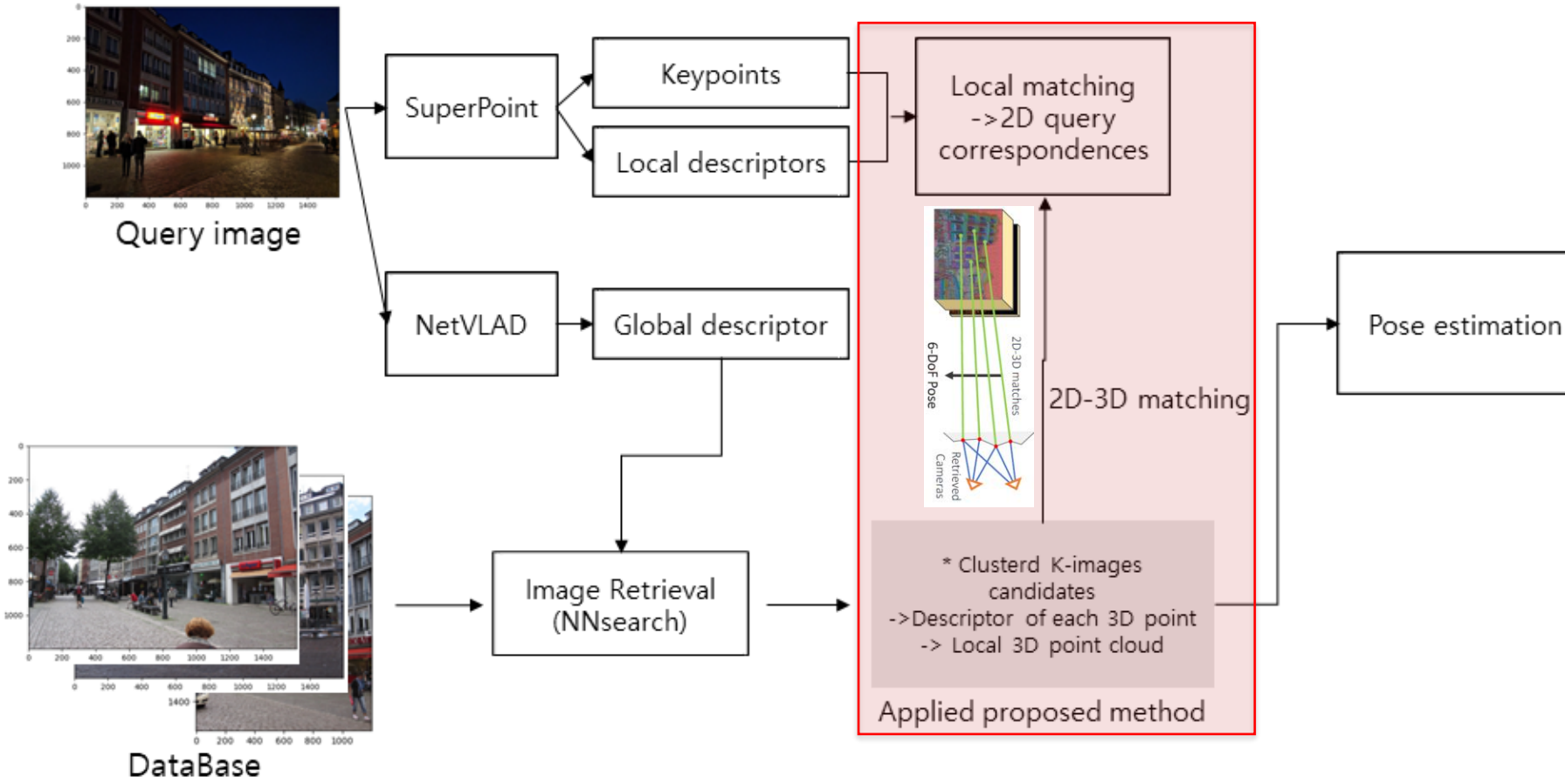
- Graph Clustering





Proposed Method

- Structure



Conclusion

- 카메라 위치 파악을 위한 복셀 표현의 Covisibility 기반 참조 이미지 클러스터링