Of interest to:

Local Authorities, Logistics Managers, Planners, Road Maintenance

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AIMapIT: AI Environment Mapping and Modelling

Street level object detection and mapping for discovery and geolocation of assets from optical street level imagery

Background

Infrastructure and utility companies currently use manual campaigns to populate and maintain asset databases. Assets such as road signage and telegraph/electricity network poles are usually distributed over large geographic areas making the process of data collection and monitoring labour-intensive and time-consuming.

Challenge

Develop an automatic solution for discovery and geotagging of stationary street side objects from optical or multi-sensor imagery (radar, lidar, satellite, multispectral).

Solution

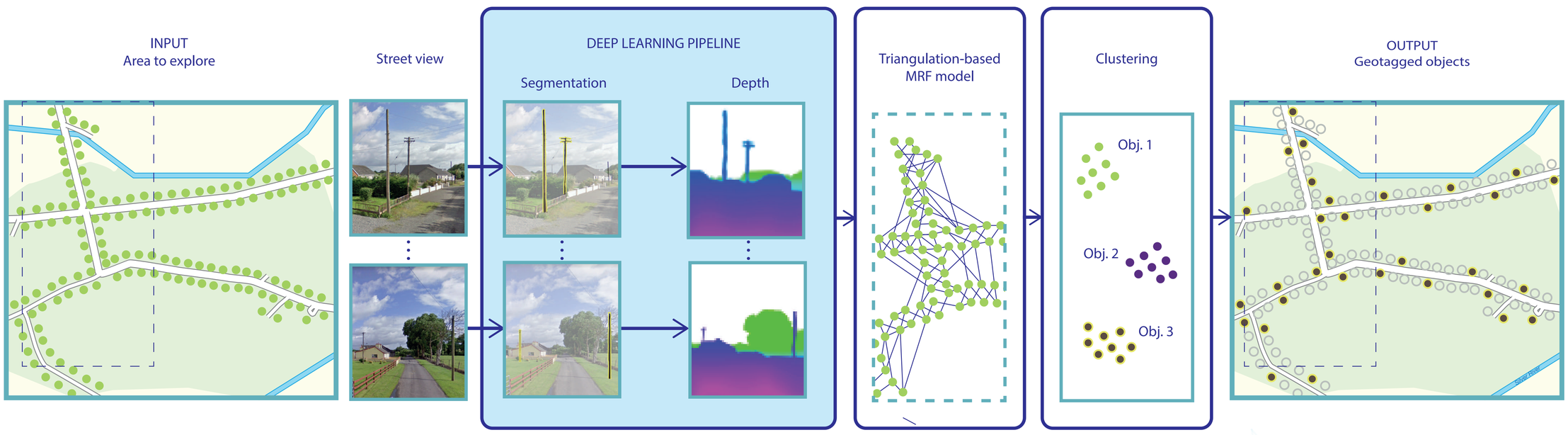
AIMapIT is an innovative solution for detection and geotagging of objects from street level optical imagery.

The system can be trained to detect any street furniture, vegetation, facade elements and landmarks from optical or multi-sensor imagery.

Inputs: Street view imagery openly available from Google, Bing and Mapillary.

ADAPT Technology: State-of-the-art deep learning for image analysis and an innovative geolocation module.

Outputs: Object detection and geotagging.



Awards

Shortlisted for a Technology Ireland Award and the AI Awards in 2018.

Results and Benefits

Prototype for pole detection developed for eir:

- Detection accuracy 92+%
- Position accuracy within 2m
- Low compute complexity 200km of roads =1h desktop/1-GPU
- Reliable low cost asset detection and monitoring
- Replace costly and time consuming manual processes
- Enables recycling of existing image data

Use Cases

- Autonomous navigation: drones and self-drive vehicles
- Maintenance planning
- Agriculture, vegetation and environment monitoring and maintenance: forestry, land use and coastal erosion
- Logistics and route planning

Dr Vladimir A. Krylov, Dr Eamonn Kenny and Prof Rozenn Dahyot

To learn more about innovative ADAPT technologies, contact: collaboration@adaptcentre.ie

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