HD Maps: Fine-grained Road Segmentation by Parsing Ground and Aerial Images

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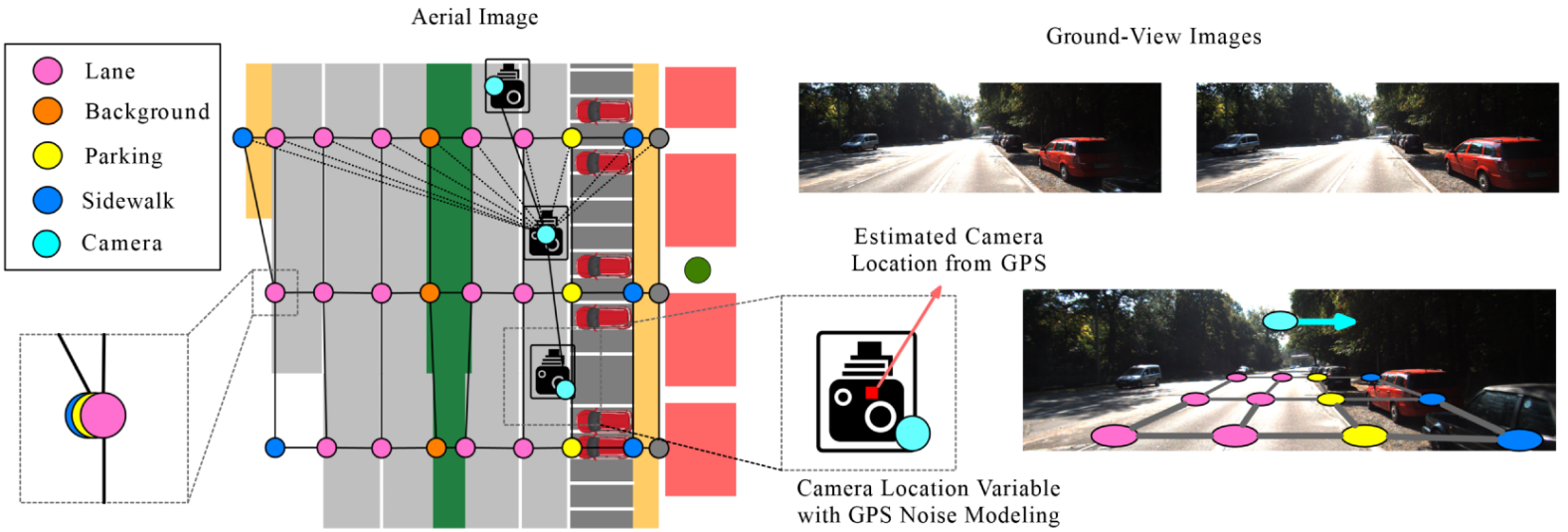

- Fine-grained segmentation for fully autonomous systems
  parking spots, side-walk, background, number and location of road lanes
- Alternatives:
  - Many man-hours of laborious and tedious labelling
  - Imagery/LIDAR from millions of cars
- Using monocular aerial imagery, topology of the road network from OpenStreetMap, and stereo images taken from a camera on top of a car
- Accurate alignment between two types of imagery
- A set of potentials exploiting semantic cues, road constraints, relationships between parallel roads, and smoothness assumptions
- Enhancing KITTI with aerial images: Air-Ground-KITTI
- Significantly reduced alignment error compared to a GPS+IMU system