

# Appearance-Guided Monocular Omnidirectional Visual Odometry for Outdoor Ground Vehicles

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- ▶ Describes a real-time algorithm for computing the ego-motion of a vehicle relative to the road
- ▶ Uses as input only those images provided by a single omnidirectional camera mounted on the roof of the vehicle
- ▶ The front ends of the system are two different trackers:
  - ▶ The first one is a homography-based tracker that detects and matches robust scale-invariant features that most likely belong to the ground plane
  - ▶ The second one uses an appearance-based approach and gives high-resolution estimates of the rotation of the vehicle
- ▶ Camera trajectory estimated from omnidirectional images over a distance of 400m. For performance evaluation, the estimated path is superimposed onto a satellite image