

NRI: FND: COLLAB: Distributed; Semantically-Aware Tracking and Planning for Fleets of Robots

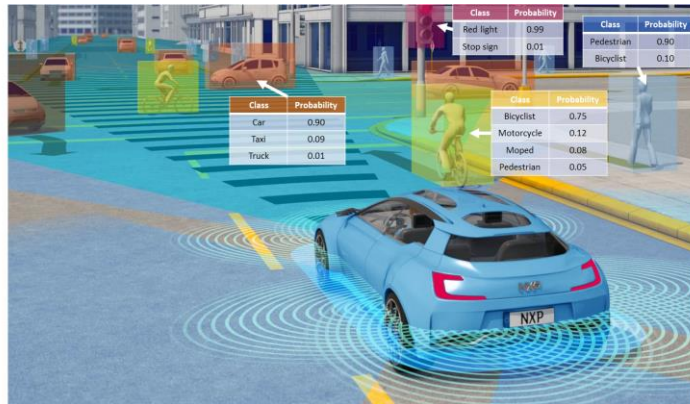
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Challenge

- Ensure safe and dependable operation of CAVs or drones in a fast-paced dense urban environments



Solution

- Create spatially distributed memory architecture by combining:
 1. CNN-based object classification
 2. Multi-target Bayesian filters
 3. Online, distributed tessellation algorithms
- Develop semantically-aware, online path planning algorithms
 - Account for range of possible reactionary behaviors of other objects

Scientific Impact

- Use in distributed sensor networks
- Use in other unstructured environments (e.g., homes)

Broader Impact

- Improve robot safety
- Support student mentorship at all levels (undergrad, MS, PhD)
- Inclusion in UG and G courses
- Lab tours for K-12 students