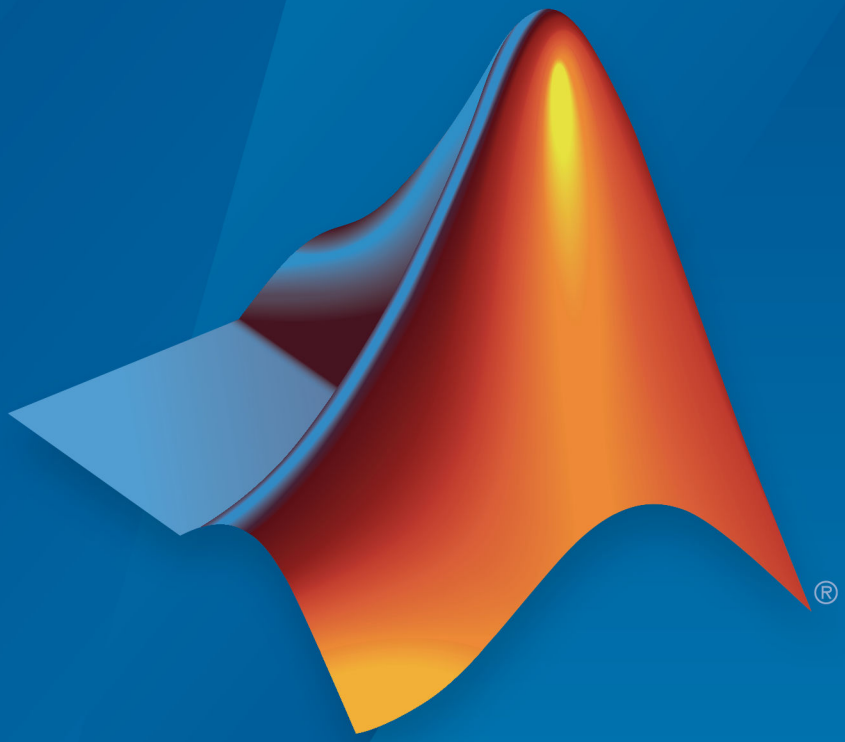
Automated Driving System Toolbox™

Getting Started Guide



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Revision History

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Automated Driving System Toolbox Product Description

Design, simulate, and test ADAS and autonomous driving systems

Automated Driving System Toolbox provides algorithms and tools for designing and testing ADAS and autonomous driving systems. You can automate ground-truth labeling, generate synthetic sensor data for driving scenarios, perform multisensor fusion, and design and simulate vision systems.

For open-loop testing, the system toolbox provides a customizable workflow app and evaluation tools that let you automate labeling of ground truth and test your algorithms against ground truth. For HIL and desktop simulation of sensor fusion and control logic, you can generate driving scenarios and simulate object lists from radar and camera sensors.

Automated Driving System Toolbox supports multisensor fusion development with Kalman filters, assignment algorithms, motion models, and a multiobject tracking framework. Algorithms for vision system design include lane marker detection, vehicle detection with machine learning, including deep learning, and image-to-vehicle coordinate transforms.

Key Features

- Ground-truth labeling workflow app to automate labeling, and tools to compare simulation output with ground truth
- Sensor fusion and tracking algorithms, including Kalman filters, multiobject tracking framework, detection-track assignment, and motion models
- Driving scenario generation, including road, actor, and vehicle definition and scenario visualizations
- Sensor simulation for camera and radar, with object lists as output
- Computer vision algorithms, including lane detection and classification, vehicle detection, and image-vehicle coordinate transforms
- Visualizations, including bird’s-eye-view plots of sensor coverage, detections, and tracks, and video overlays for lane markers and vehicle detection
- C-code generation for sensor fusion and tracking algorithms (with MATLAB® Coder™)