

LiangDao Data Solution

The development and iteration of intelligent driving features requires continuous optimization of perception algorithms, and the superiority of the algorithms depends on the effectiveness of data closure and the quality of training data. LiangDao's perception training data solution aims to support mass production driving development projects by assisting clients in testing, validating, evaluating, and training intelligent driving perception capabilities quickly as well as using data to drive autonomous driving system capabilities effectively and economically.

LiangDao Data Solution



Professional customized vehicle modification and calibration



Multi-sensor calibration, fusion data acquisition



Data management with rich experience in mass production



High quality automated and manual data processing



Scenario mining and analysis that is both precise and easy to use



Efficient and accurate performance evaluation of perception algorithms

Core Advantages

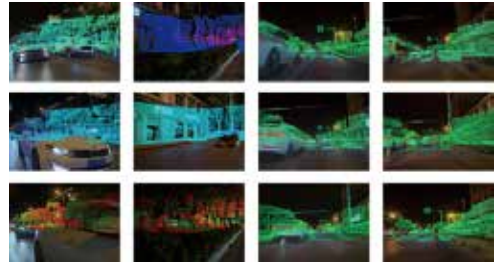
- A complete toolchain of intelligent data processing from data acquisition to perception algorithm training
- Full-stack technical support for mass-production perception systems, from standardized product to customized development
- Thoughtful service from solution design to after-sales, empowering customers to improve the efficiency of intelligent driving vehicle perception function development and quickly complete the iteration of intelligent driving algorithm model

LiangDao Self-developed Data Processing Toolchain

Sensor Calibration Software LD Calibrator

LD Calibrator is a self-developed automated vehicle sensor calibration software, which supports the calibration of multiple sensors in a vehicle coordinate system.

- supporting one-click precise alignment of LiDAR and one-click calibration of camera internal and external parameters.
- Supporting the joint calibration of LiDAR and camera to make the multi-sensors data fusion more accurate and reliable.
- flexible deployment online, user-friendly interface and quick to get started.
- Supporting multiple data input and output formats to meet various application requirements.



Data Acquisition Software LD Logger

LD Logger is a data acquisition visualization software deployed on the vehicle side, self-developed by LiangDao. It can support online timing and monitoring of sensor status, visualization of acquired data, scenarios tagging in real time, etc..

- Multi-sensors (LiDAR, camera, CAN) data acquisition at the same time.
- Real-time acquisition visualization of point cloud and camera images.
- Real-time monitoring of acquisition devices status and feedback to users.



Data Automatic Labeling Algorithm Software LD ALT

LD ALT is an automatic point cloud data labeling tool, which can fuse the vehicle dynamic information with traffic participants by LiangDao self-developed AI perception algorithm. It can output traffic objective data, ego car dynamic parameters and road features, etc..

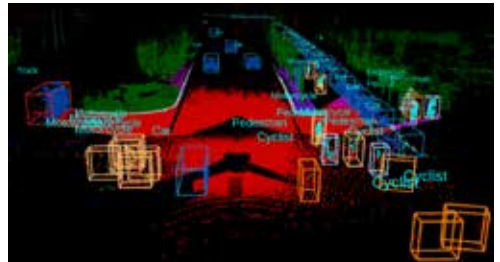
- Multi-type dynamic and static objectives recognition.
- Accurate perception of dynamic objectives' parameters, including position, direction, velocity, acceleration, etc.
- Significantly improving the labeling efficiency.



Data Labeling Software LD Editor

LD Editor is a semi-automated 3D point cloud data labeling software, which can identify and classify the features of objectives and roads.

- Core functions such as inheritance, automatic fitting, and automatic error correction.
- Greatly improving the efficiency of ground truth production, reducing the manual labeling workload, and shortening the time of ground true production.



LD Data Management System

LD Data Management System (DMS) is a one-stop big data management platform on cloud, which connects multiple data function modules including data pre-processing, data automatic labeling, scenario mining, analysis and management, etc., and can realize resource management, data acquisition management, file management, pipeline management, scenario management, perception set management, objective database management, scenario labeling and other functions.

- One-stop big data management platform with rich functions.
- Efficient management of big data and full exploitation of data value.



Perception Algorithms KPI Evaluation Tool LD KPI

LD KPI can automatically compare the perception results of DUT with ground truth and output a performance KPI report, including accuracy, recall rates, etc..

- Multi-dimensional quantitative reflection of the performance of the DUT or perception system.
- Customize the time, space, type and metrics of the evaluation.

