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How the Data Labeling Service Empowers the Self-driving Industry?

High-quality training data will maximize the efficiency of artificial intelligence in the self-driving industry

BEIJING, CHINA, April 12, 2022 /EINPresswire.com/ -- Self-driving technology is going to transform the transportation industry, and social and daily lives. It's hard to know when that day will arrive. As life is priceless, we have to seek perfection from the beginning.
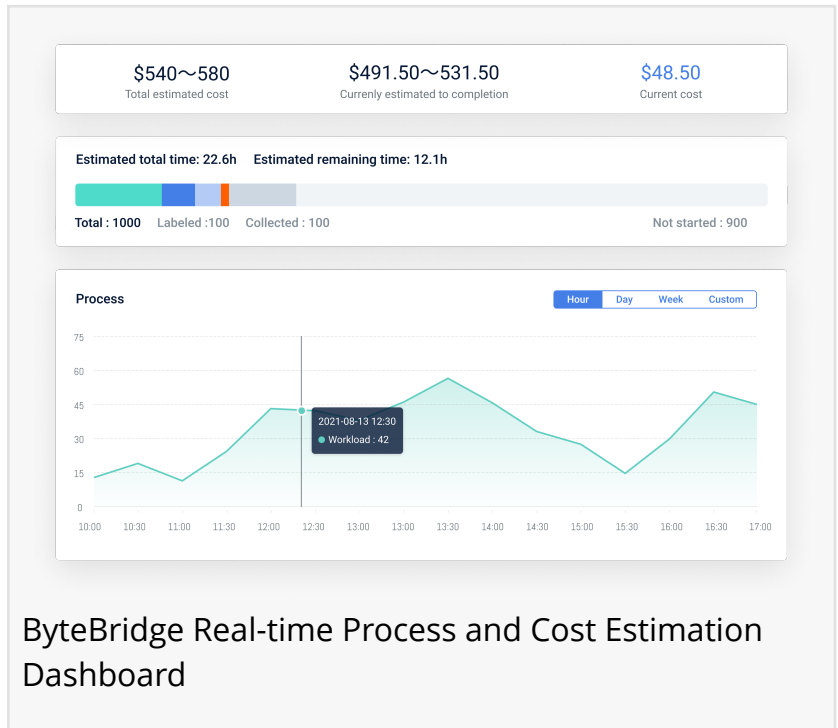
The mainstream algorithm model is mainly based on supervised deep learning. It is an algorithm model that derives the functional relationship

ByteBridge Real-time Process and Cost Estimation Dashboard

between known variables and dependent variables. A large amount of structured labeled data is required to train and tune the model.

Data Annotation, an "Engine" for Self-Driving Cars
The data annotation is supposed to make machines understand the world. In auto autonomous driving, the annotation scenarios usually include changing lanes to overtake cars, passing intersections, unprotected left turns and right turns without traffic light control, and some complex long-tail scenarios such as vehicles running red lights, pedestrians crossing the road, vehicles parked illegally on the roadside, and so on.

Common Data Labeling Types Include
2D Bounding Boxes
Lane Marking
Video tracking annotation
Point Annotation
Semantic Segmentation
3D Object Recognition

3D Segmentation
Sensor Fusion: Sensor Fusion Cuboids/Sensor Fusion Segmentation/Sensor Fusion Cuboids Tracking

High-quality Data is the Future of the Self-driving Industry

If you want to make self-driving cars more "intelligent", and form a closed loop for self-driving applications that can be replicated in different vertical landing scenarios, the model needs to be supported by massive and high-quality real road data.

In the future, refinement, scenario-based, and customization will be three important directions of the data labeling solutions. It's challenging for self-driving manufacturers to internally meet the burgeoning demand for high-quality data annotation.

Human Workforce Behind Data Labeling Service

Different from the tags of "advanced" and "high-tech" in the artificial intelligence industry, data labeling is still a labor-intensive industry.

There is a popular saying in the data annotation industry, "more intelligent, more labor". Nowadays, some semi-automated or automated annotation capabilities come into practice, applied in video annotation and 3D point cloud annotation services.

However, manually labeled data is less prone to errors. The human workforce cannot be totally replaced by the tools leading with an AI-based automation feature, especially dealing with exceptions, edge cases, complex data labeling scenarios, etc.

An In-house Team or Go With Outsourcing?

As mentioned, data accuracy is vital in the car industry, here comes another question-- Should I build up an in-house team?

We have to keep 2 points in mind,

1. Complex process: including annotation tools and data pre-processing built-up, labeler performance training and following, data validation and quality check, etc.

2. High financial involvement: such as infrastructure labor cost, R&D, etc.

Compared to in-house infrastructure, outsourcing service needs effective communication and fast feedback. It is very important for clients to choose the right one who can serve as "an extension department" of their company.

The Following Parts Should Also be Taken Into Account

Progress preview: clients can monitor the labeling progress in real-time
Result preview: clients can get the results in real-time
Customer service: clients can communicate with project managers about the changes so that workers can respond quickly and make changes in workflow

In conclusion, in the self-driving industry, we rely much on the human workforce. In terms of outsourcing partner choosing, we have to make sure of the flexible engagement in the labeling loop as we need labelers to respond quickly and make changes in workflow, based on the model testing and validation phase.

[ByteBridge](#) is a human-powered and ML-powered data labeling tooling platform. We provide scalable, high-quality training data for the ML/AI industry. The self-developed 3D Point Cloud labeling, quality inspection tool, and pre-labeling functions can complete high-quality and high-precision 3D point cloud annotation for [2D-3D sensor fusion](#) or 3D images provided by different manufacturers and equipment, and provide a one-station management service of labeling, QA, and QC.

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