LIDAR ANNOTATION FOR OUSTER

Overview

Expert LiDAR annotations improved Ouster's product performance, enhanced their ML models, and helped them manage complex datasets, resulting in scalable, high-quality results.

Increase in product performance
20%

Scaled annotation team from
2 → 10 members

Team turnover rate
10%

Timeline
2020 - ongoing

Client

Ouster delivers advanced digital lidar sensors for 3D sensing, enhancing automation and safety in automotive, industrial, and robotics applications.

Challenges

Delivering precise LiDAR data annotations, managing diverse datasets, and ensuring seamless integration into the client's machine learning pipeline.

Solutions

The Label Your Data team annotated LiDAR scans using advanced tools and provided ongoing training for consistent, high-quality results.
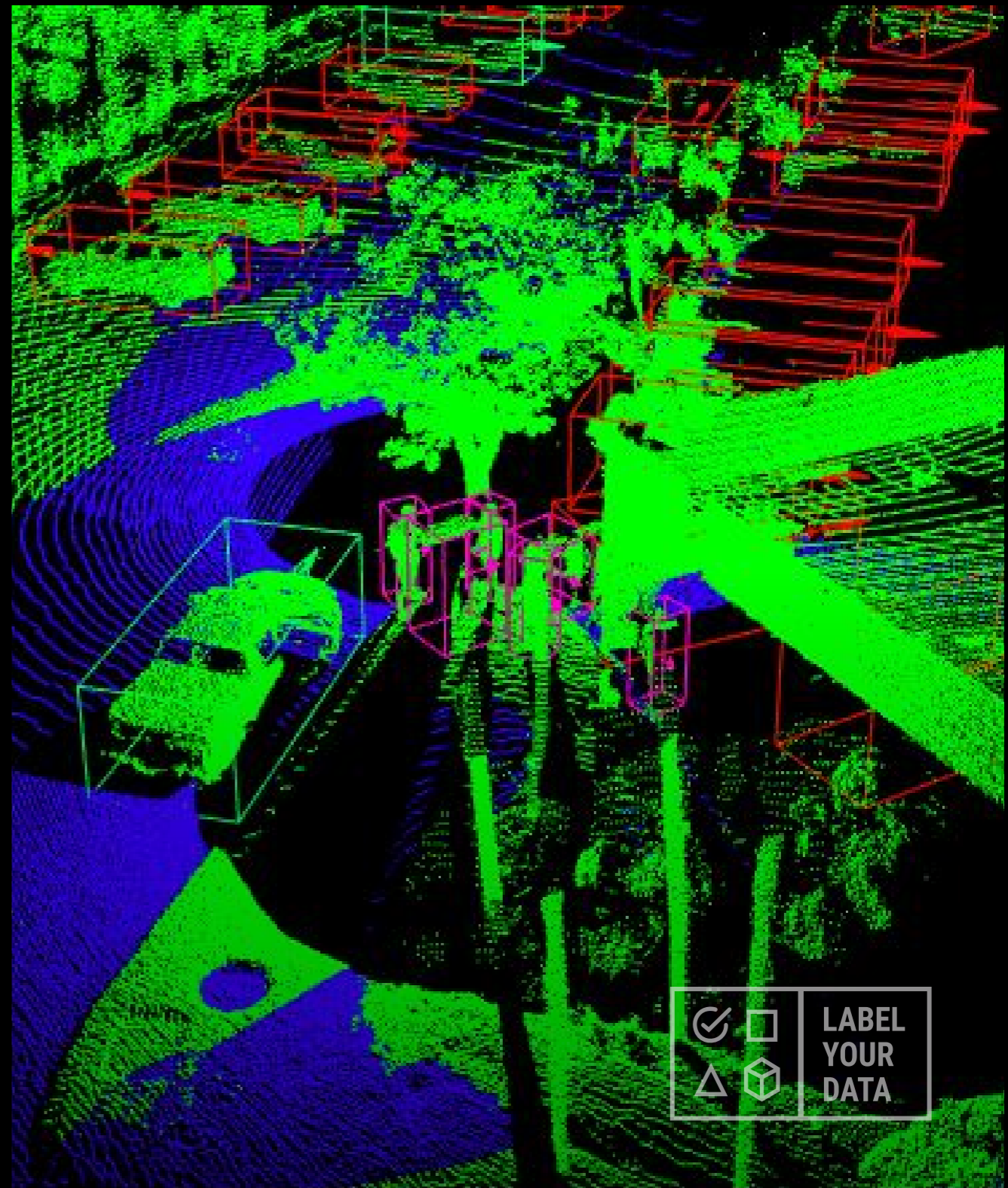
Results

Ouster saw a 20% performance boost, a 0.95 F1 score, and improved MOTA, leading to enhanced machine learning model accuracy and scalability.

Client

Ouster is a US-based, leading provider of high-performance lidar sensors, leveraging digital technology to deliver 3D sensing solutions across various industries, including automotive, industrial, and robotics.

Their advanced sensors enable accurate, real-time 3D data capture for enhanced automation and safety applications.

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Challenges

The main challenge was delivering precise and scalable LiDAR annotation that seamlessly integrated into Ouster's ML pipeline.

The project required careful management of diverse datasets, ensuring that annotations met the high standards necessary for performance analysis and model training for the LiDAR tech provider.

! Handling data from varied environments (interior/exterior, dynamic/static sensors)

! Achieving consistent annotation quality for diverse use cases

! Scaling the annotation process while maintaining accuracy

! Ensuring seamless access and usability of annotated data for Ouster

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Solution

To tackle the challenges, Label Your Data started with a small team first to build deep project expertise before scaling.

Annotators used advanced tools to label LiDAR datasets, handling static and dynamic sensors across various environments.

Continuous training and tool accessibility ensured consistent, high-quality results.

✓ Provided 2D bounding boxes and 3D cuboids for the LiDAR scans provided by Ouster.

✓ Integrated third-party LiDAR annotation tools for precise labeling.

✓ Focused on both static and dynamic sensor data to cover varied use cases.

✓ Scaled the annotation team in alignment with project growth demands.

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Training

The training process started with a dedicated project supervisor appointed in December 2020, who developed a comprehensive guide to LiDAR annotation.

As the team scaled over these years, the supervisor trained each new member, contributing to a consistent quality standard. With a low turnover rate of about 10%, the team has maintained stable and reliable results throughout the project.

Results

LiDAR annotation provided by the Label Your Data team enabled Ouster to perform accurate performance regression analysis. This significantly boosted their product performance.

The annotations seamlessly fed into Ouster's ML pipeline, exposing models to a wider array of data. The model now shows enhanced detection and tracking capabilities.

1. Increase in product performance
20%

2. Improved multi-object tracking accuracy
15%

3. Scaled annotation team from
2 → 10 members

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> "*The precise LiDAR annotations and consistent quality, even as the project scaled, have been invaluable, significantly boosting our product performance and ML accuracy.*"

Dave Pike
Staff Software Engineer at Ouster

LABEL YOUR DATA

Run your free pilot

No commitment

Check our performance based on a free trial.

Flexible pricing

Pay per labeled object or per annotation hour.

Tool-agnostic

Working with every annotation tool, even your custom tools

Security-compliant

Work with a data-certified vendor: PCI DSS Level 1, ISO:2700, GDPR, CCPA.