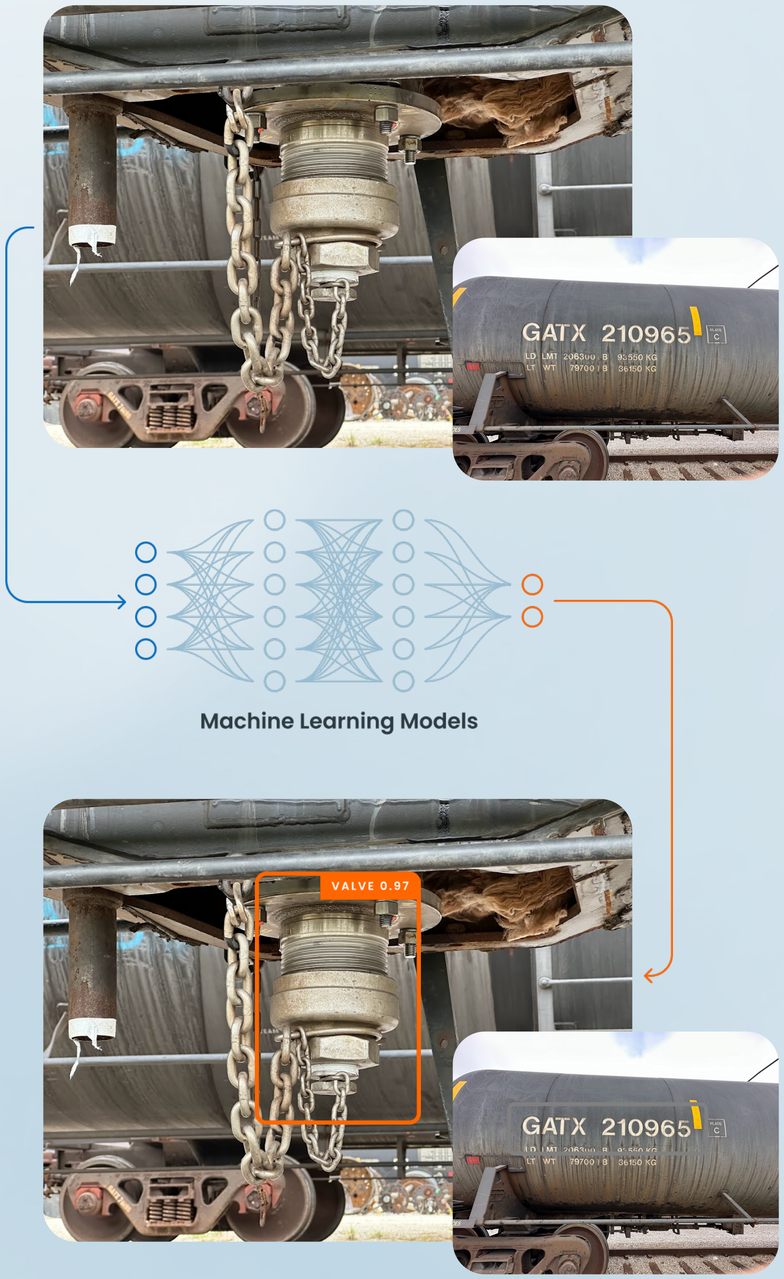
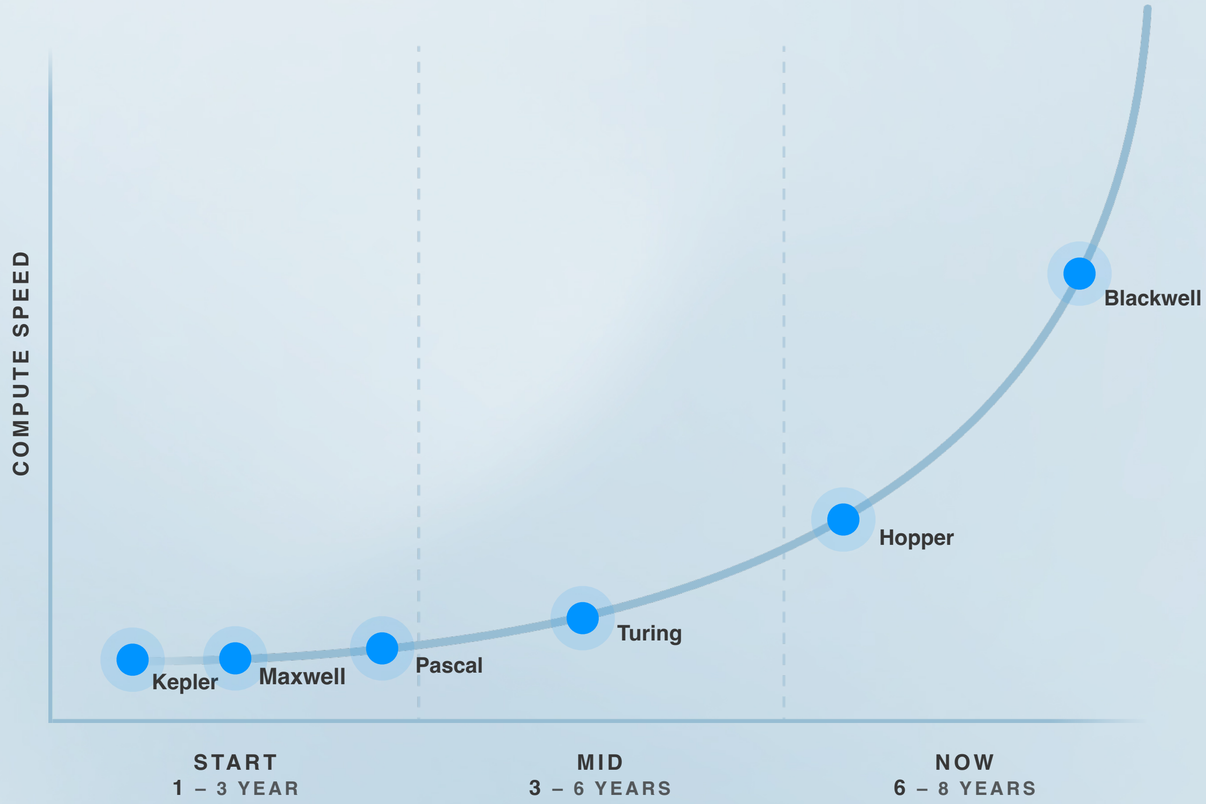
Creating Business value with Industrial AI

What is Vision AI



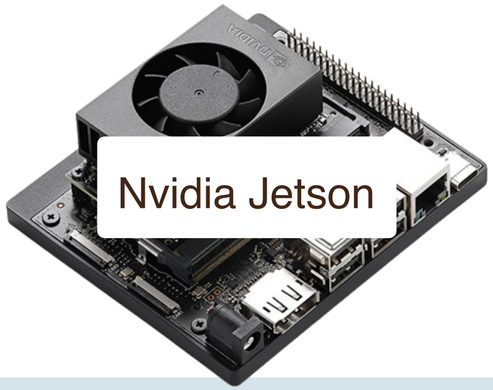
Power of Vision AI

- Local decision making
- Operates 24/7
- Reliable
- High Quality Standards



Edge Computing

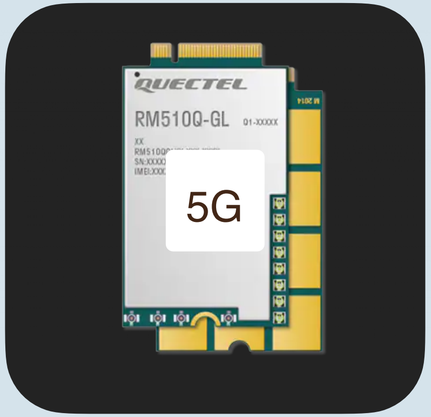
Platforms I use:



TOPS

Trillion Operations

per Second



Low Watts

GDPR

Hardware

Drone

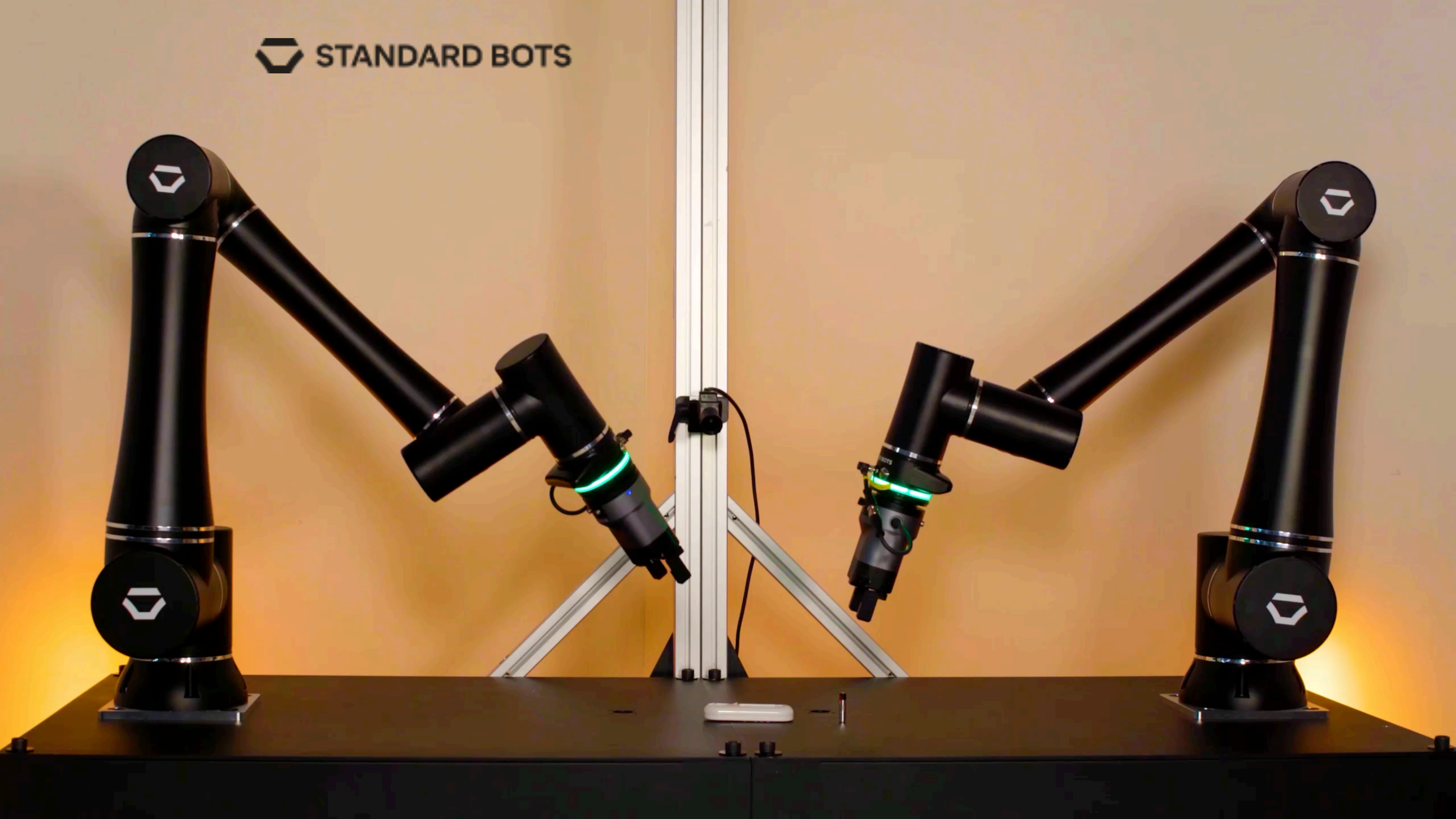
DJI Dock 2

Robot

Fanuc, StandardBots

Camera

High speed, GigaPixel


STANDARD BOTS

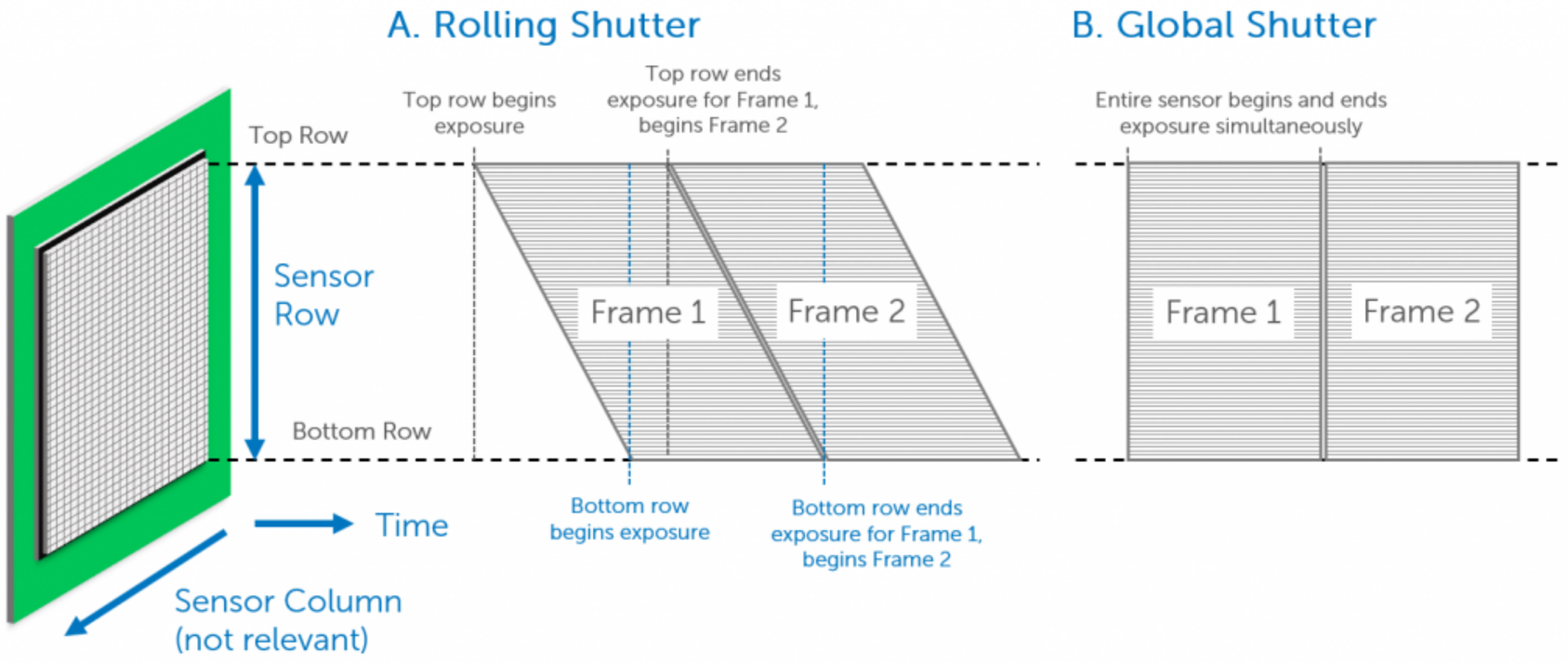
Camera

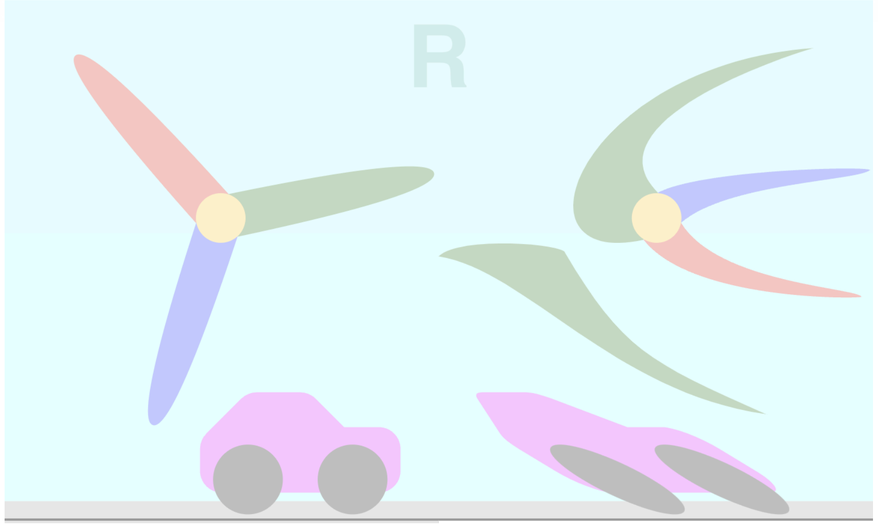
Connectivity:

USB3
GigE

Global Shutter

3D - Lidar


A. Rolling Shutter
B. Global Shutter
Top Row
Top row begins exposure
Top row ends exposure for Frame 1, begins Frame 2
Entire sensor begins and ends exposure simultaneously
Sensor Row
Bottom Row
Frame 1
Frame 2
Frame 1
Frame 2
Time
Bottom row begins exposure
Bottom row ends exposure for Frame 1, begins Frame 2
Sensor Column (not relevant)

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Big Models

Datasets

Public

ImageNet

14 Million pictures

Public

COCO

300k pictures

Big Models

Transfer Learning

Your dataset

Private

Your specific need

1000 pictures

+

Datasets

Public

ImageNet

14 Million pictures

Public

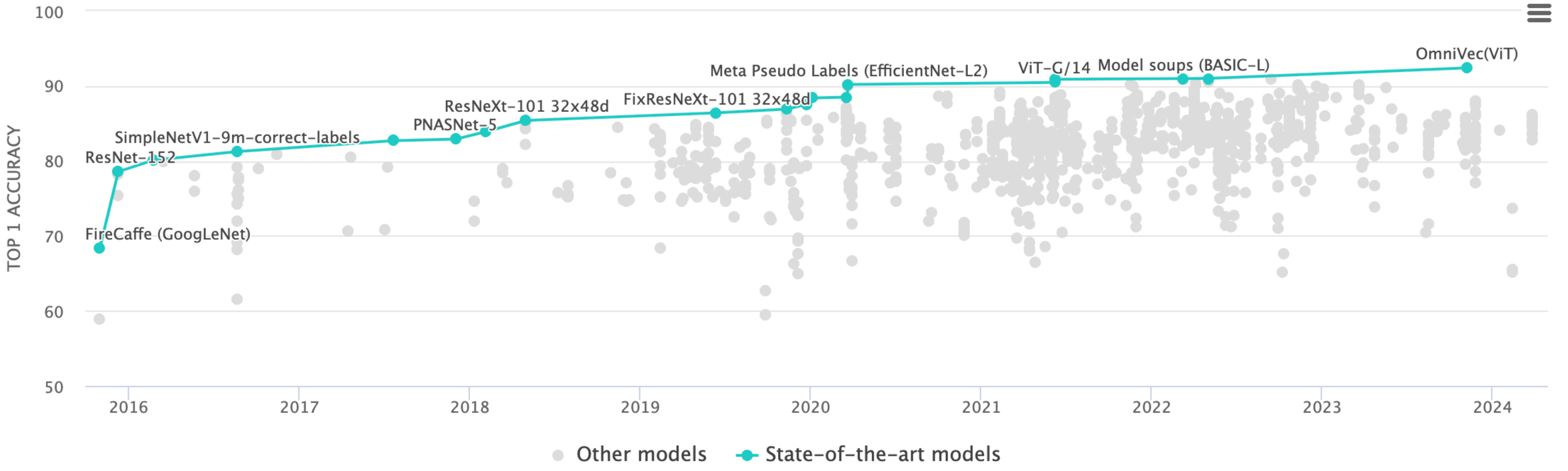
COCO

300k pictures

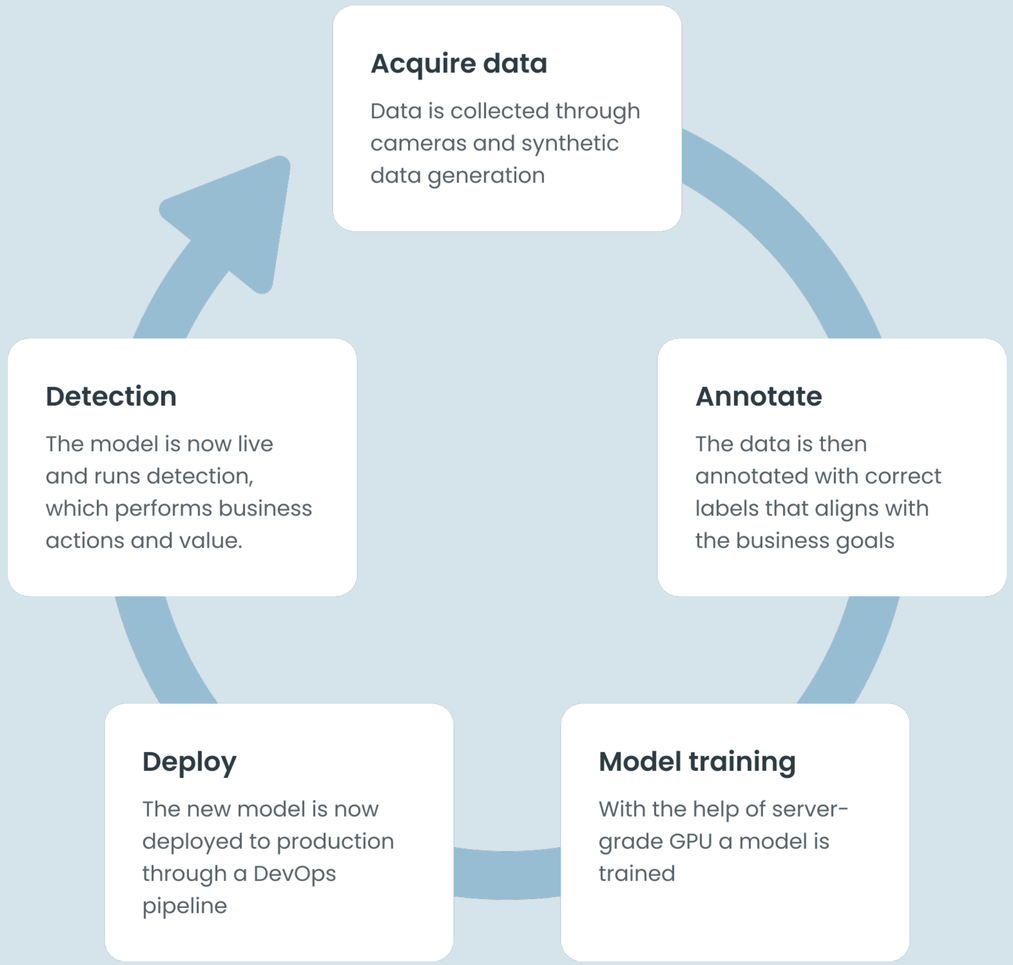
Image Classification on ImageNet

Leaderboard Dataset

View Top 1 Accuracy by Date for All models



Process


Acquire data
Data is collected through cameras and synthetic data generation
Annotate
The data is then annotated with correct labels that aligns with the business goals
Model training
With the help of server-grade GPU a model is trained
Deploy
The new model is now deployed to production through a DevOps pipeline
Detection
The model is now live and runs detection, which performs business actions and value.

Vision AI project timeline

WEEK 1

Workshop

We sit together and figure out what you are trying to archive with Vision AI

WEEK 3

First model development

We make the first model developments together, we sit together with QA to understand and get a deep understanding of company quality.

WEEK 3-14

AI Development

Training data is an essential part of a Vision AI project. At the start Training data is captured manually while verifying high quality and annotations.

WEEK 14

AI deployment

Getting real data from production is critical, deploying to real hardware ensures that test and verify quickly.

WEEK 22+

Continuous model development

Having the production hardware allows new data to be picked up and used in model development. Calibration and new training is made.

Vision AI implementation

Hardware

The physical enabler of the Vision AI setup

Will be estimated separately for every installation - starting with Hearne.

Services

The development of specific features and functionality

Is interchangeable to the specific needs and can be extended over time. Eg. starting with the digital yard and photo capturing.

Vision AI Core Components

The trained core of the system constantly improving with use

Reusable across sites, user groups, and subject areas.

Standalone Vision AI

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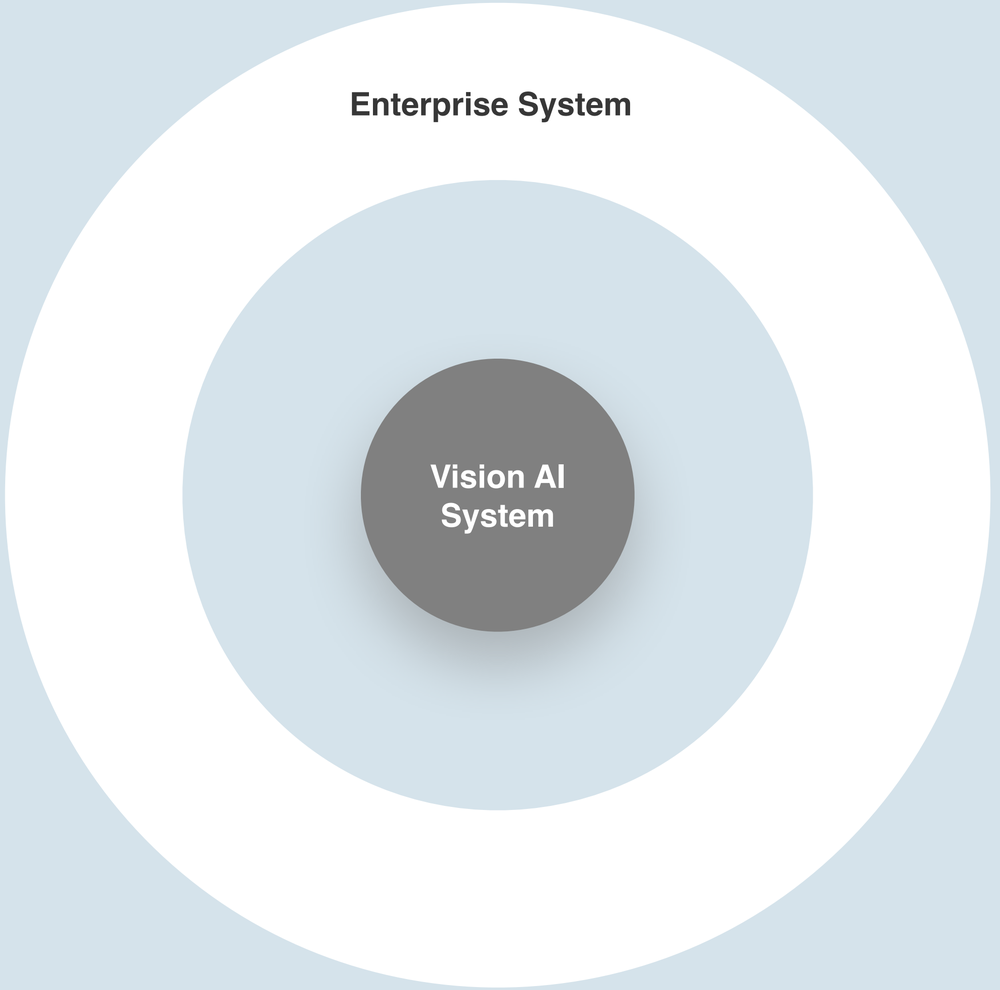
Value



Integrated Vision AI
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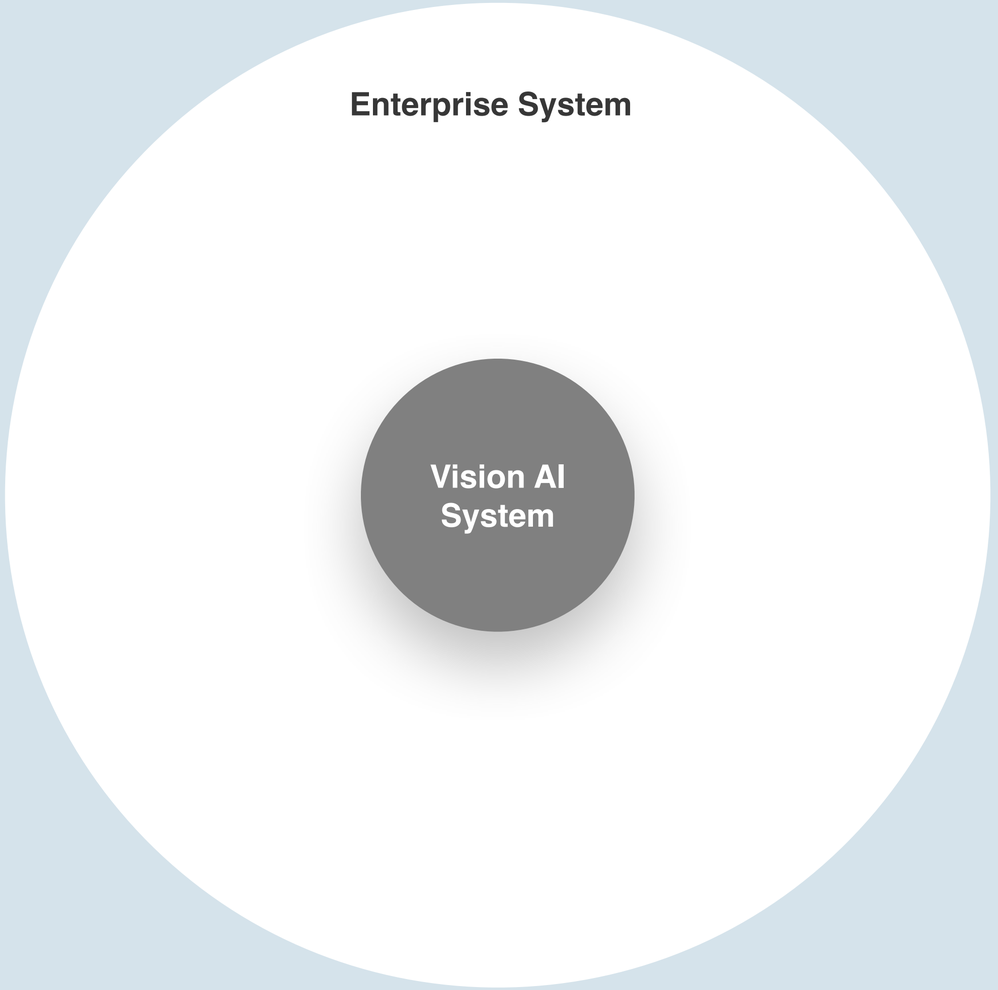
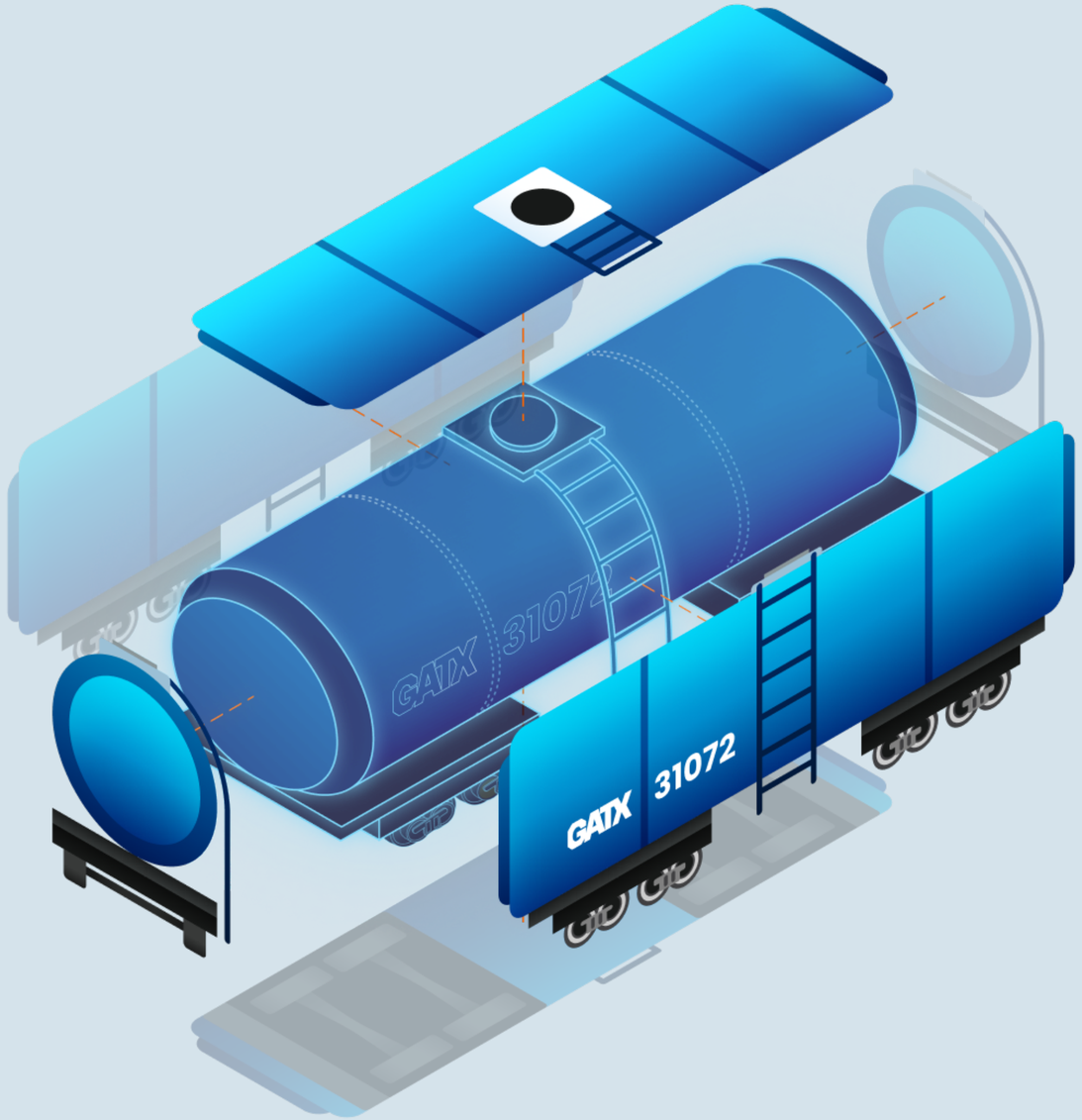
Real business value



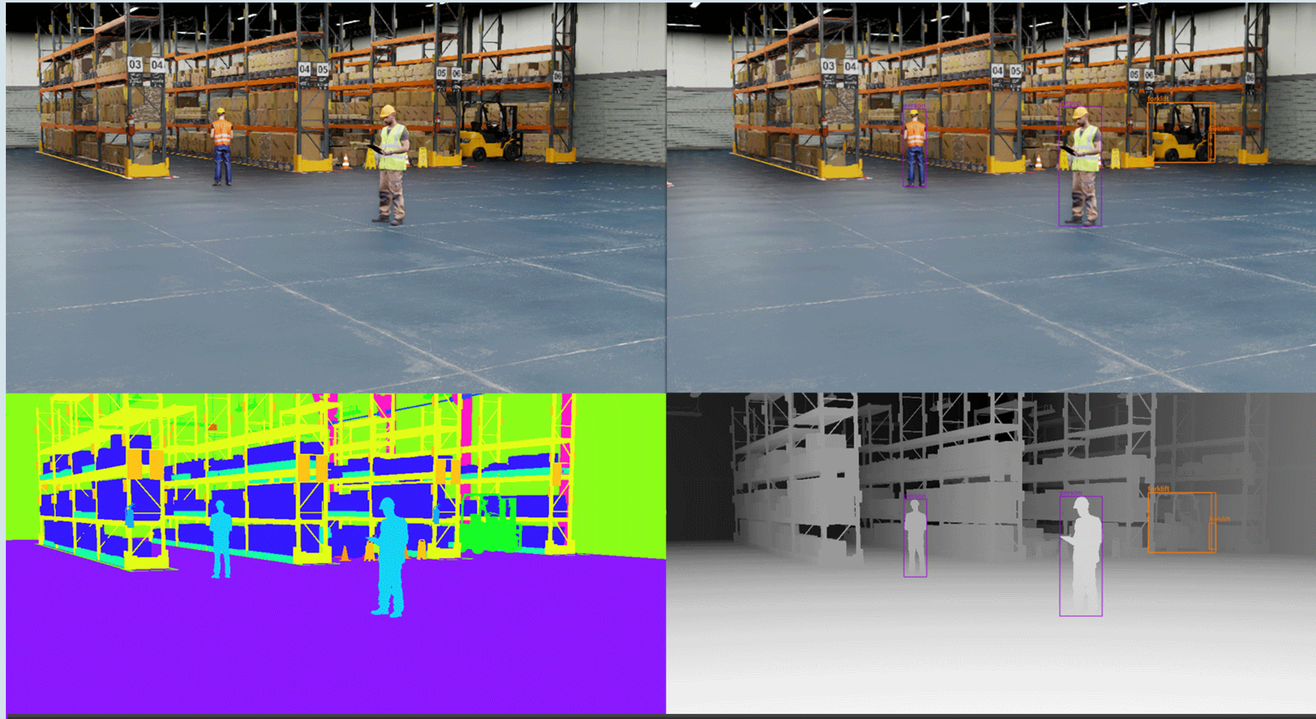
What is then possible?

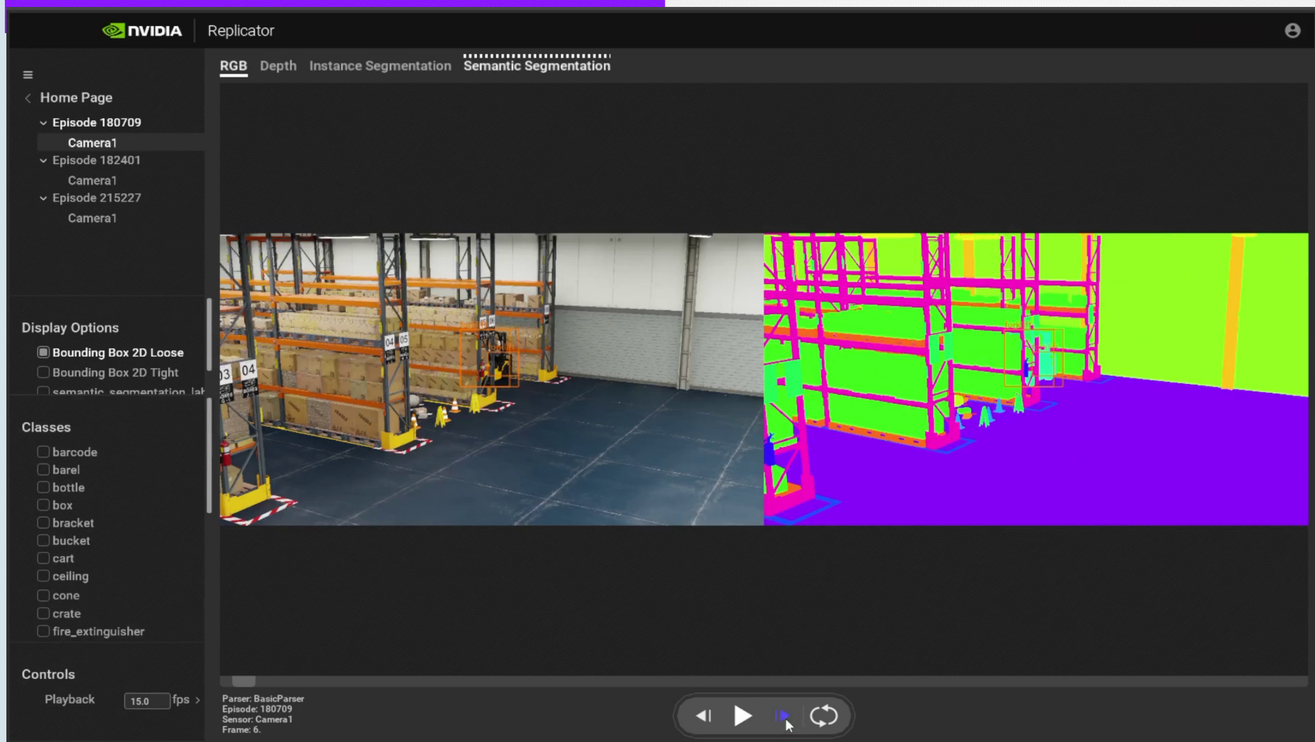
Digital Twin



Digital Twin

Allows training data and high precision insights into the business aspects.





NVIDIA OMNIVERSE™


A2
A2
A2
A2


VD 186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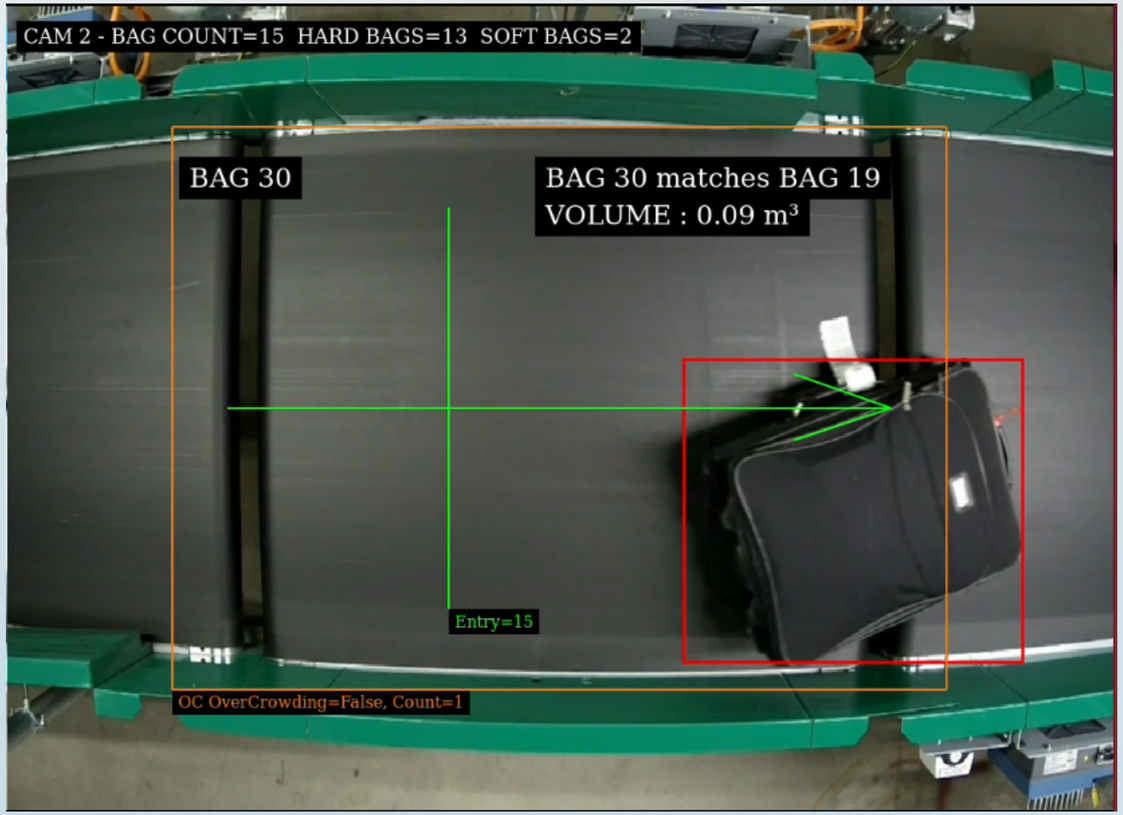
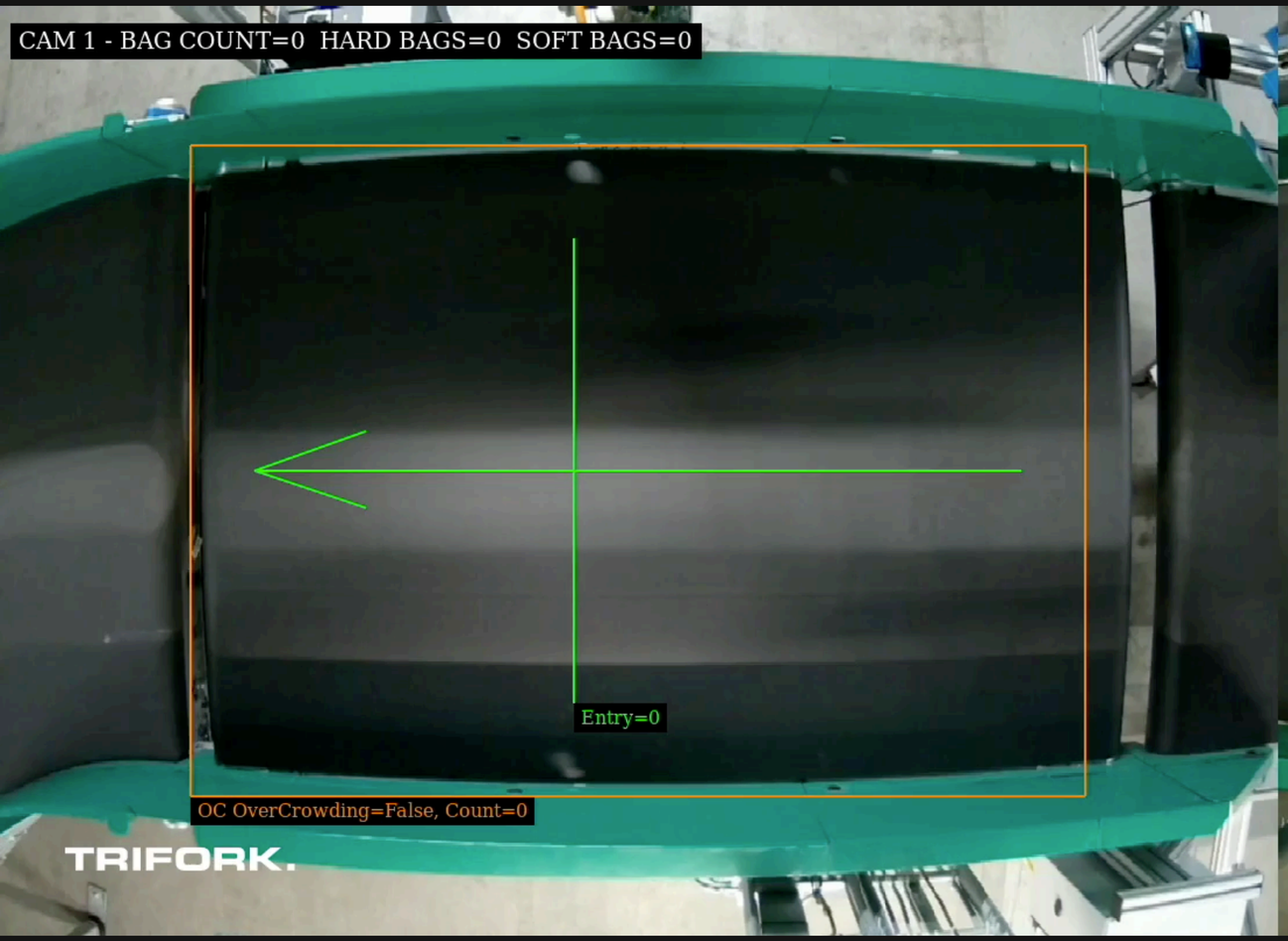
Sorting bags faster

Processing facilities are physically constrained

- Scaling is difficult
- Tedious error correction
- Many bottlenecks



Copenhagen Airports CPH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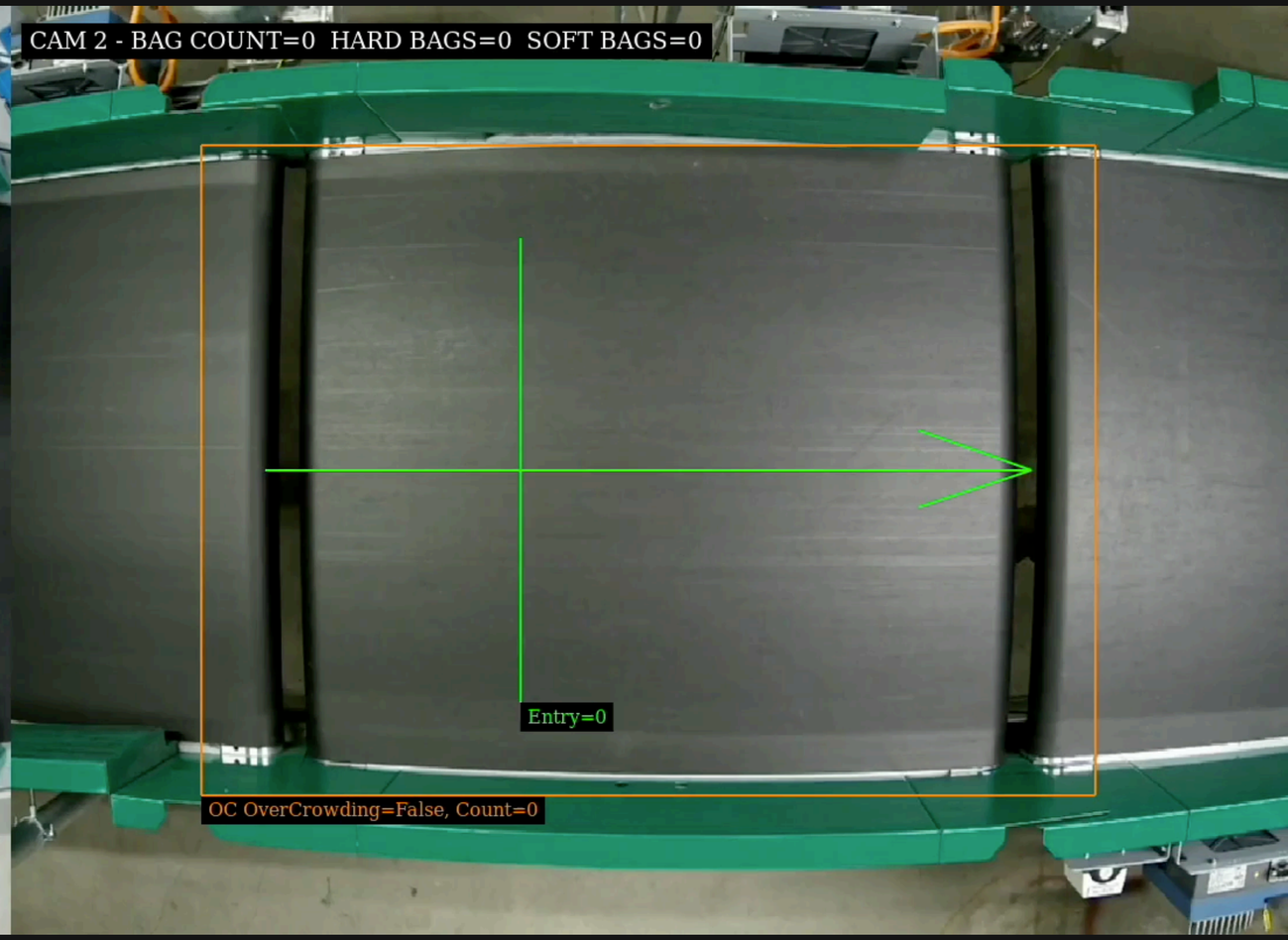
Entry=0
OC OverCrowding=False, Count=0
TRIFORK.


CAM 2 - BAG COUNT=0 HARD BAGS=0 SOFT BAGS=0
Entry=0
OC OverCrowding=False, Count=0

Benefit of Vision AI

Enhance human capability

Higher Quality

Faster decision

Thank You!

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