



Cambrion
VISION

Cambrion

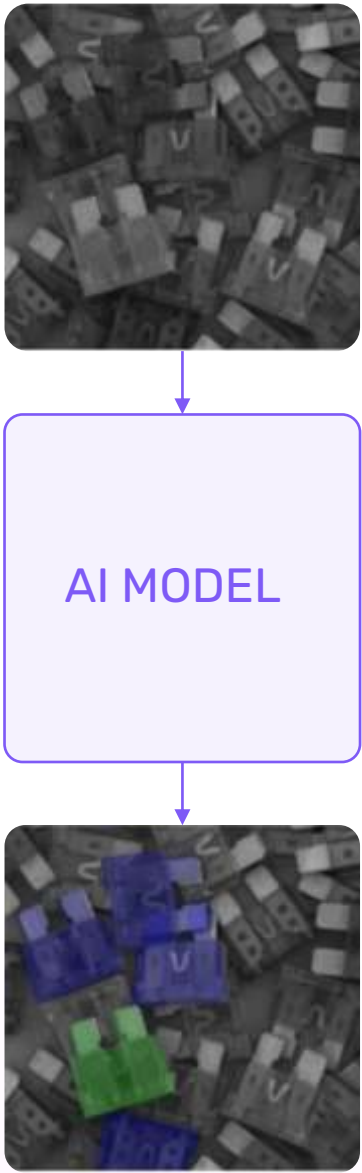
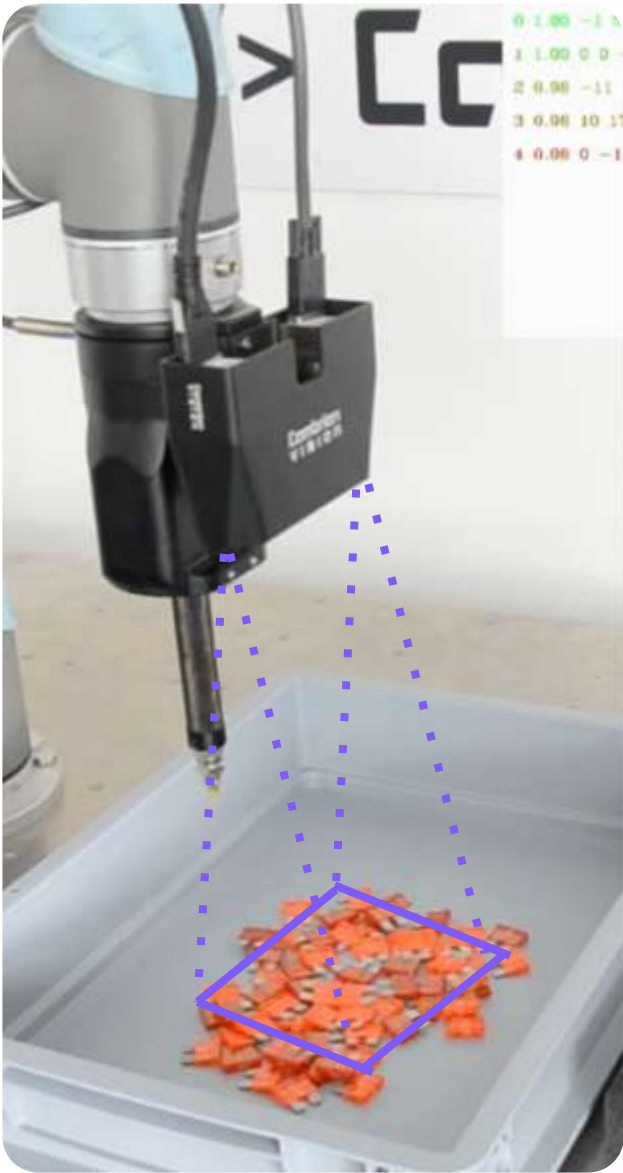
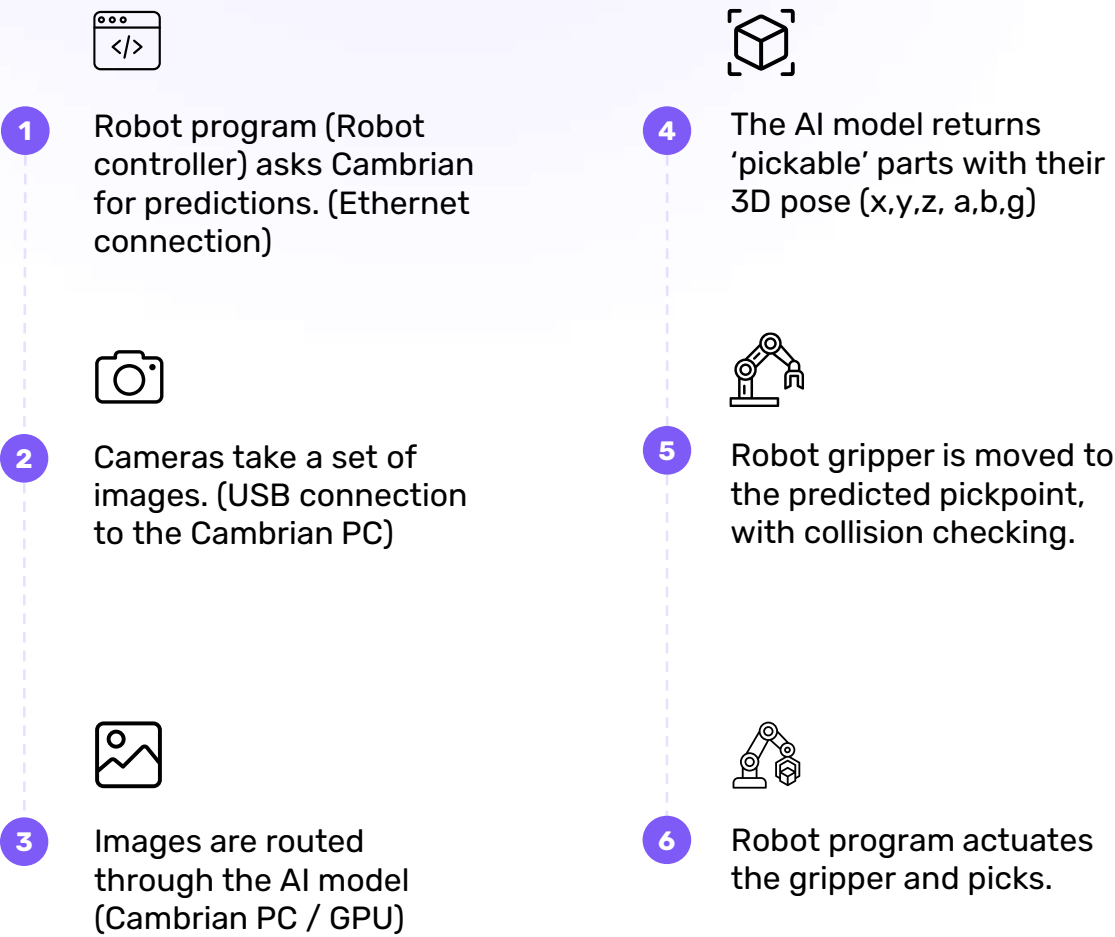


Cambrian is an **AI-based** 3D-vision

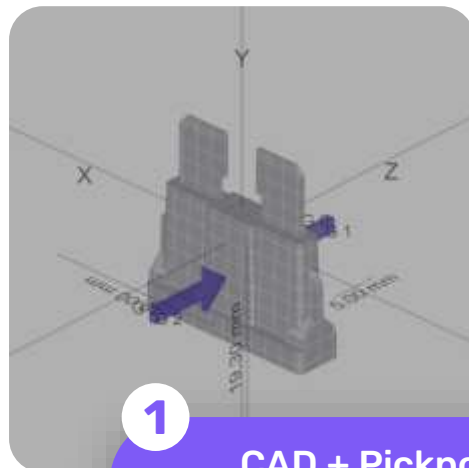
for collaborative and industrial
robot arms



How Cambrian 3D vision works



How the AI model is made



1

CAD + Pickpoint definitions

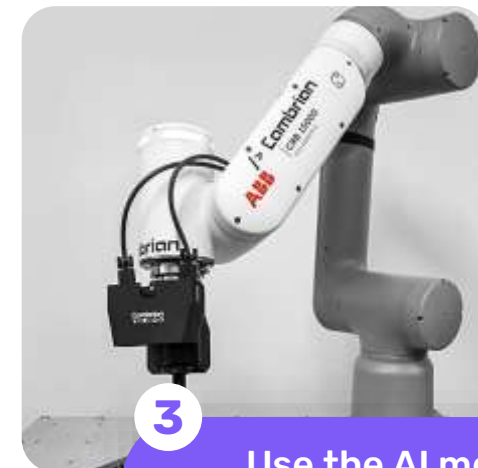


2

AI model training with synthetic data in the cloud or on premise



AI Model file ~ 160MB



3

Use the AI model with the robot



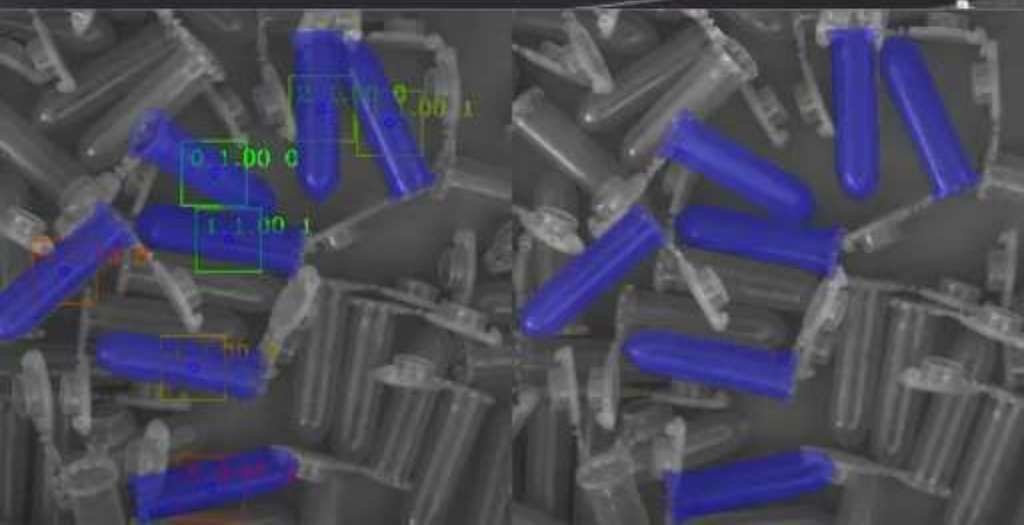
Watch Video

Cambrian VISION

Robust for external light conditions

Cambrian real time predictions & robustness for light conditions

Here Cambrian detects and predicts poses for available pickpoints. In the video robustness for light conditions is demonstrated as well.



3D vision product package, installation, programming



1. Package

Customer/integrator receives Cambrian system



4. Train models

Often models trained before step 3.



2. Hardware installation

Cambrian hardware is installed on the robot.

Typically 10-30min



5. Configure robot program for the task

Often models trained before step 3.



3. Install Cambrian robot API scripts on the Robot controller.

Perform Hand-eye calibration

Cambrian camera module is calibrated (intrinsic) before shipment. This calibration is used for AI model training.



[Cambrian support portal](#) token: vision

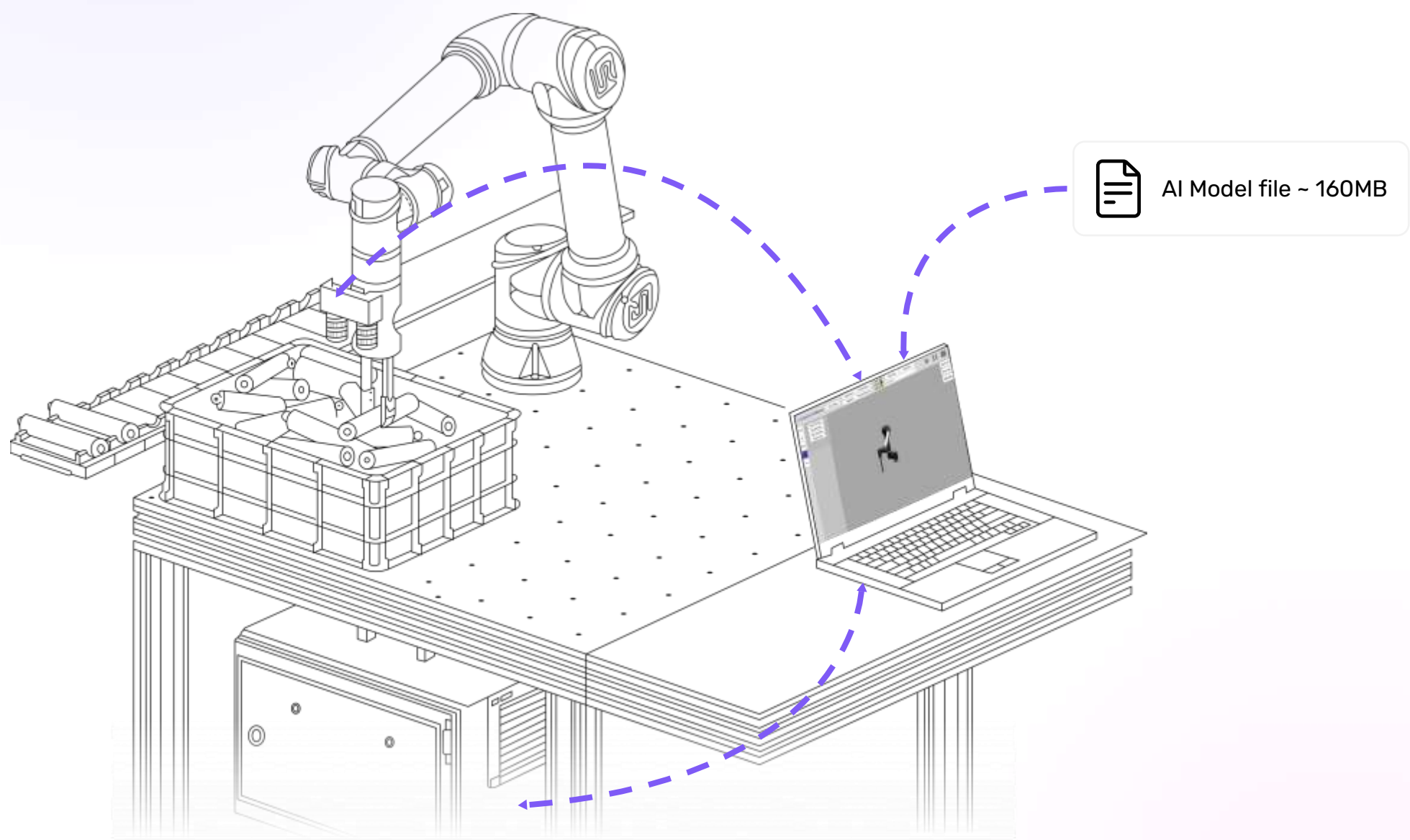
Above link has Robot API templates provided for various robot brands.

Hardware design: Cell layout, tool design, safety etc.

This is done by the integrator. Cambrian provides support.

This process is often started before customer/integrator receives Cambrian system and can go through an iteration

How Cambrian connects to the robot



Supported robots

ABB

DENSO

DOOSAN

FANUC

KUKA

ROKAE

 **UNIVERSAL ROBOTS**

YASKAWA

 **DOBOT**

Cambrian UI: Pick demo

Settings

AI Models

Unload All Models

Open Models Folder

Switch View

Clear Predictions

Collision

Cameras

AI
Model

Select Model

Name Caint1_extractiontube2

Confidence Threshold 0.85

Depth Center 0.3

Depth Range 0.035

Tilt Range 45

FOV % 60

Base Resolution 320

Trim Image Edges

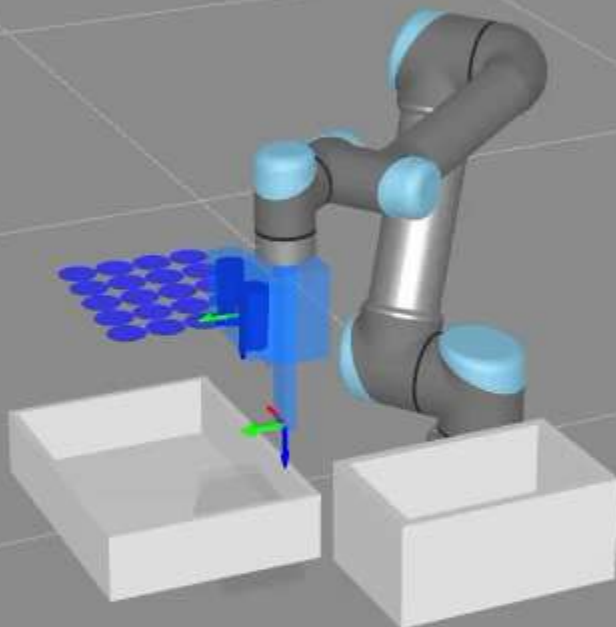
Recenter Crops ☒

GPU

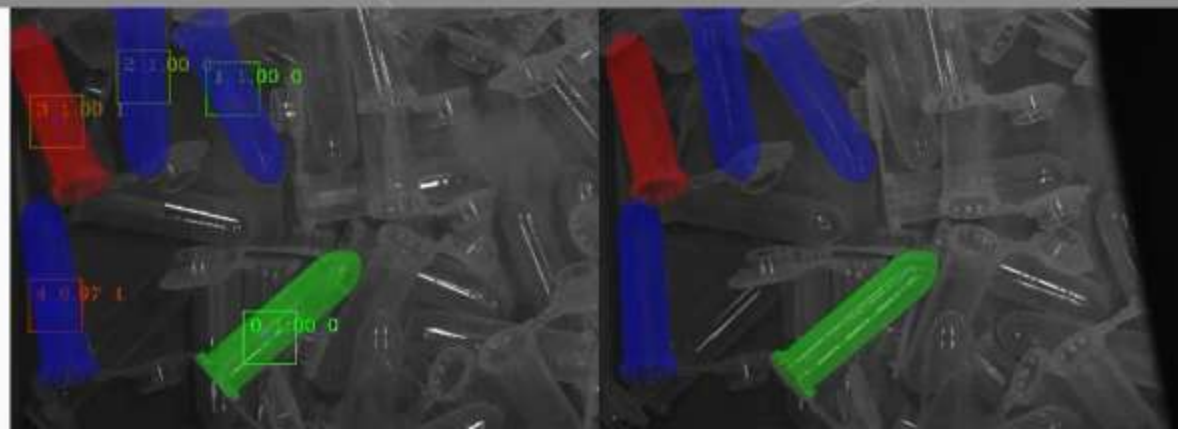
CPU

Unload Model

Open Folder



```
0 1.000 +2.0 -3.0 +40.0 -16.8 0
1 1.000 -20.0 -12.0 -59.0 -12.6 0
2 0.997 -28.0 -2.0 -88.0 -14.7 0
3 0.995 +20.0 +8.0 -88.0 -13.3 1
4 0.988 +22.0 +4.0 -78.0 -13.3 1
```



Watch Video

Log

Example use cases

- ✔ Pick and place
- ✔ Binpicking
- ✔ Feature detection
- ✔ Assembly
- ✔ Machine tending
- ✔ Cable, wire harness insertions & handling



Case study: Dynamic production with Cambrian

The Japanese consumer goods brand **KAO** implemented Cambrian into its dynamic production system.

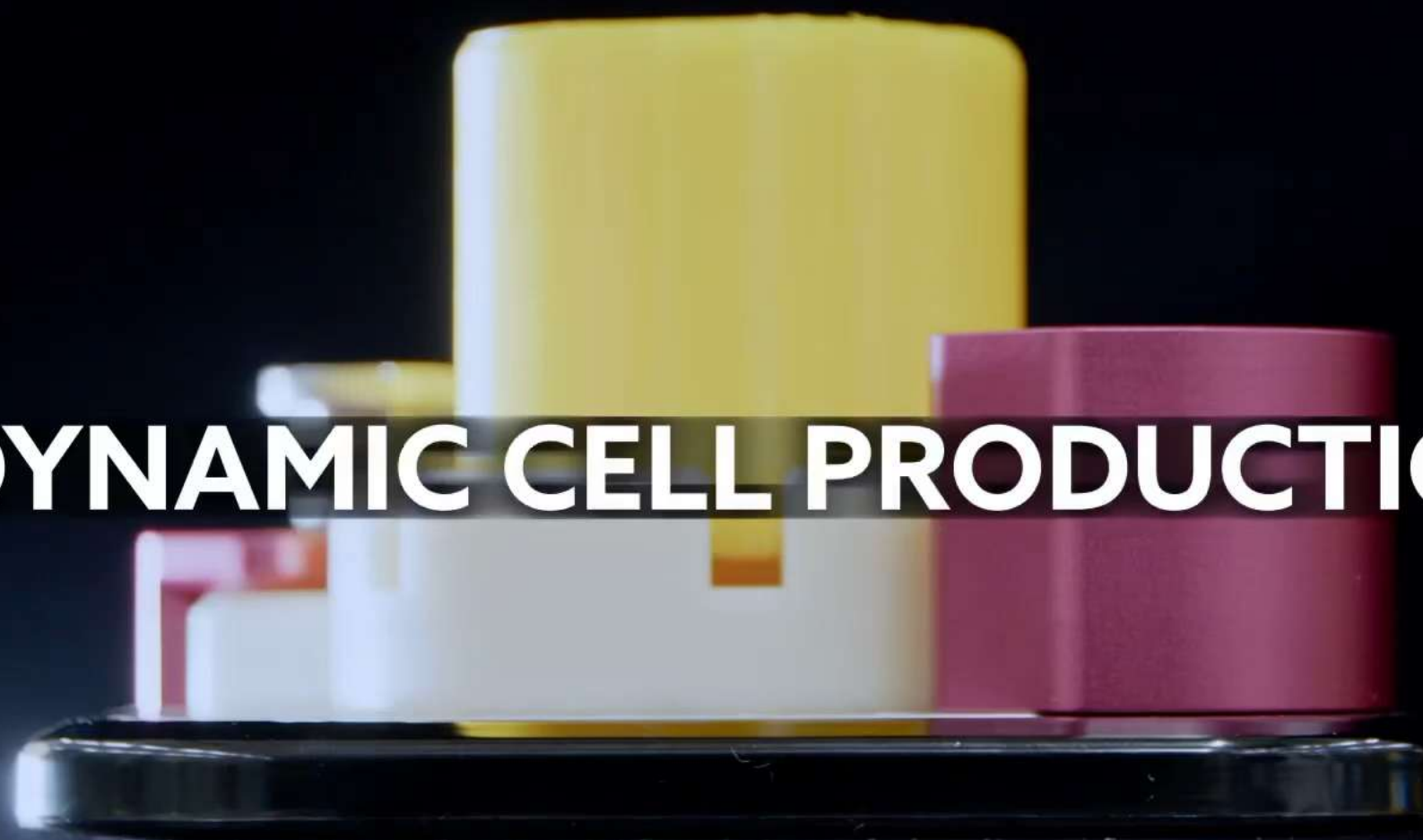
Cambrian picks incoming goods and feeds to the 'floating linear transportation system'.





Watch Video

DYNAMIC CELL PRODUCTION

A close-up, shallow depth-of-field photograph of several 3D printed parts. In the center, a tall yellow cylinder stands on a white base. To its right is a shorter, wider red cylinder. To the left, a red L-shaped part is partially visible. All parts are resting on a black, reflective turntable. The background is dark and out of focus.

Case study: Dynamic production with Cambrian



Pick and assemble 6 different parts
with Cambrian

 Watch Video

Case study: Food production



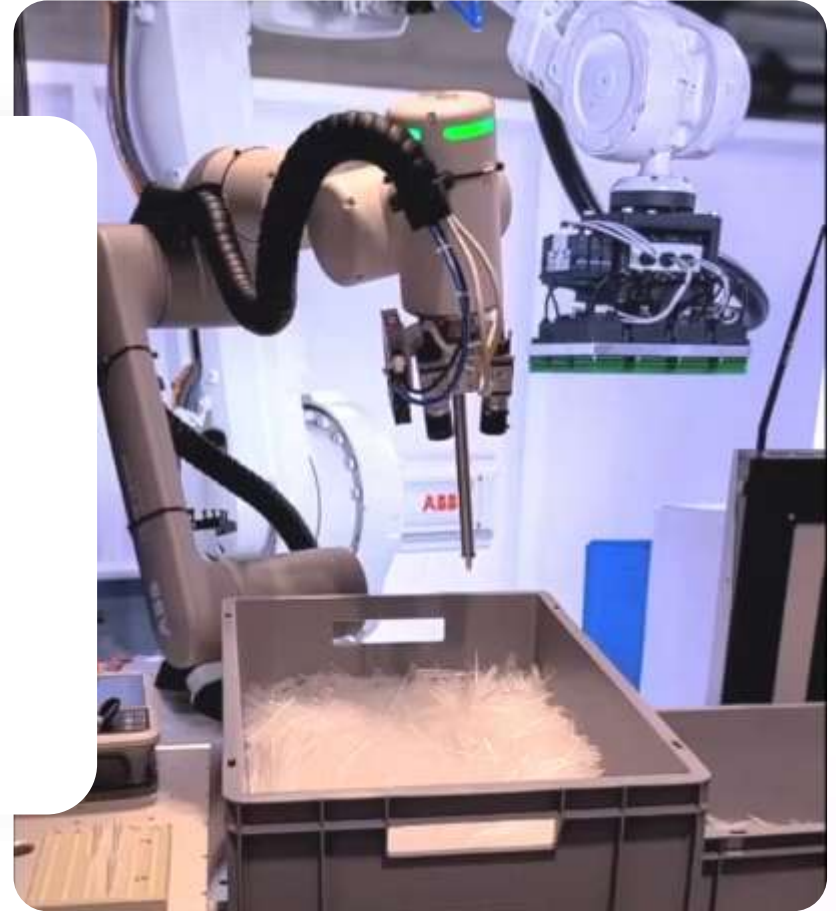
Binpicking sausages and feeding to a conveyor belt for further processing.



Case study: Transparent parts

Vision technologies have historically struggled with transparent parts.

Cambrian can accurately detect and pick transparent parts.



Pharma
Cosmetics
Medical
Automotive
Electronics

Cambrian enables a variety of manufacturing and fulfilment tasks for a broad range of industries dealing with transparent components and parts.



[Watch Video](#)



[Watch Video](#)

[Watch Video](#)



Case study: Drone battery exchange

Pull out the drone battery, exchange to a recharged one.





Cambrian is **developing AI tech
to automate HV-cable assembly
processes.**



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Cambrian VISION

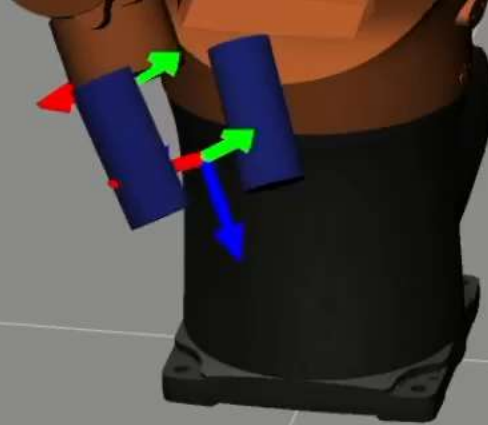
Internal light conditions

< 200ms

- Binpicking
- Kitting
- Pick and place
- Feature loc
- Cable in & handling
- App



 Watch Video



What is unique about Cambrian



Cost effective



Robustness and accuracy



Speed



Broad range of parts and applications



Easy and simple integration

Our Customers



Automotive



Automotive



Automotive



Automotive



Automotive



Automotive



Automotive



Hydraulics



Telecommunications
Equipment



Electronics



Industrial components



Infrastructure



Appliances



Pharma

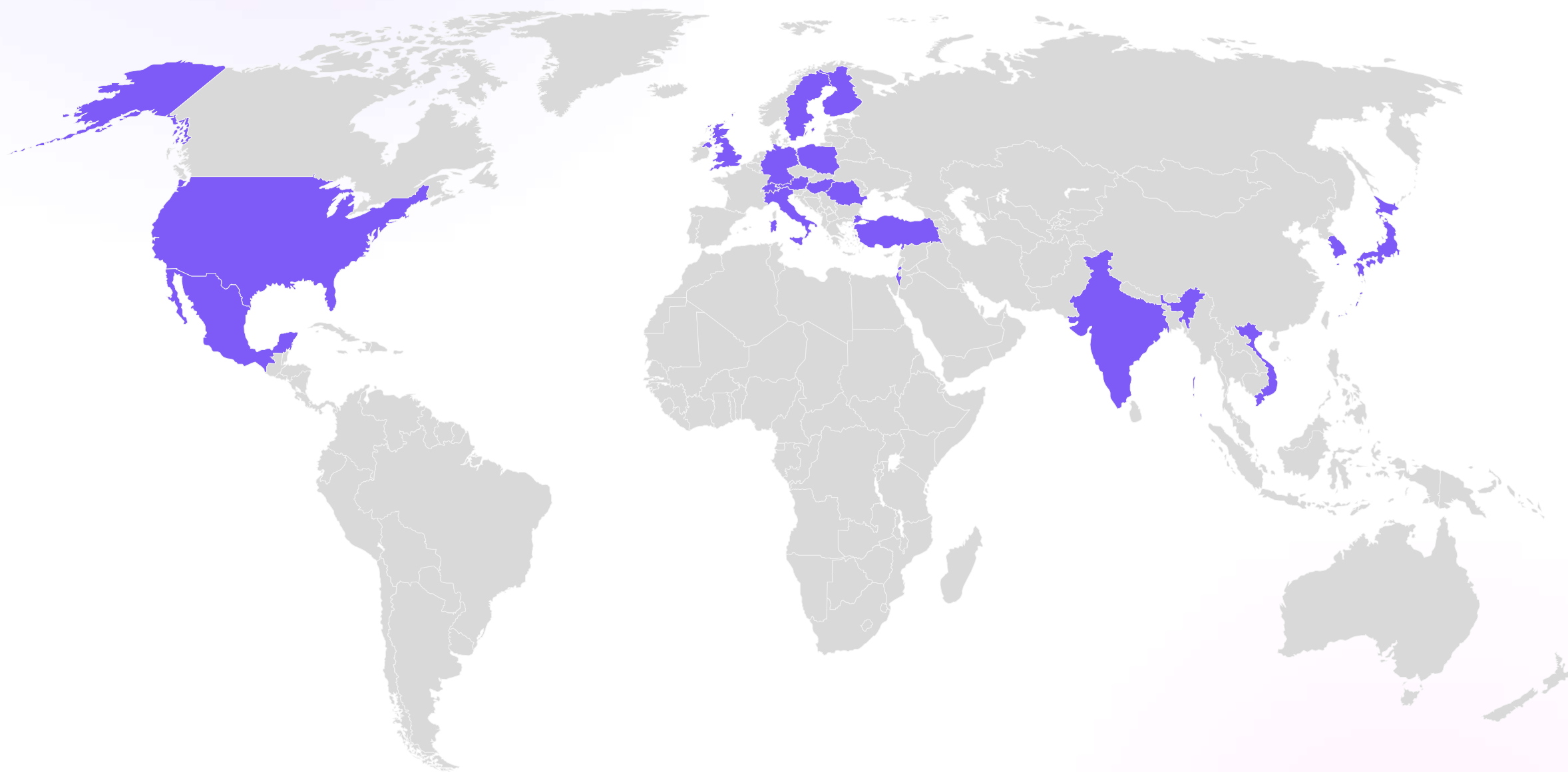


Fashion



Research

+40 distributor & integrator partners in
North America, Europe & Asia

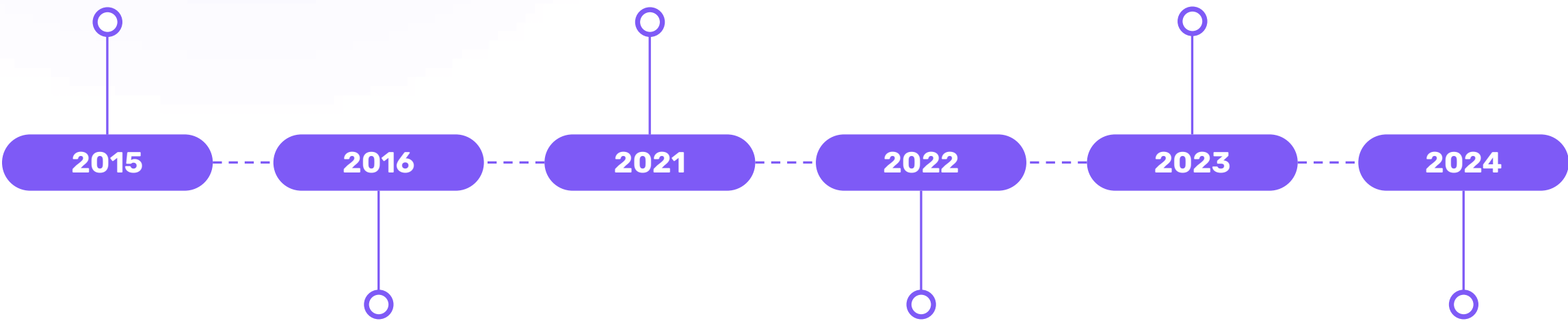


About Cambrian

Founded in London with an initial focus of VR teleoperation of robots in hazardous environment (Nuclear decommissioning)

First production ready vision system sold in 2021

>100 vision kits sold / +30 Integrator & distributor partners worldwide.



Idea:
Not having a robust 3D vision was a big problem with robotics.

Started R&D to solve the problem with AI and off-the-shelf cameras

HQ London, UK
Cambrian Robotics Ltd (UK branch) & Augsburg
Cambrian Robotics GmbH

\$3.5M Funding /
Headcount 20

About Cambrian – key facts



Over 200 vision systems sold



+40 in production



HQ London, UK Cambrian Robotics Ltd
(UK branch) & Augsburg Cambrian
Robotics GmbH



Latest funding \$3.5M backed by
Cybernetix, Yamaha, KST, DMP



Headcount 20



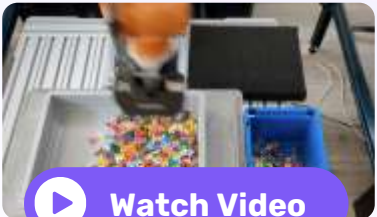
| THANK YOU



Cambrian
VISION

Cambrian

Video links



Watch Video



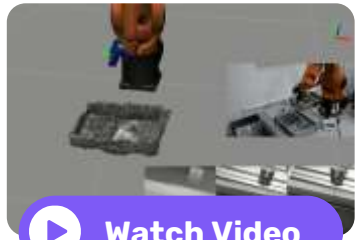
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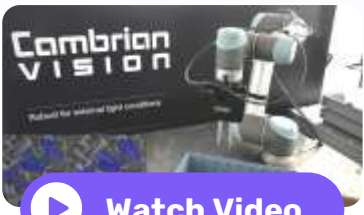
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Watch Video



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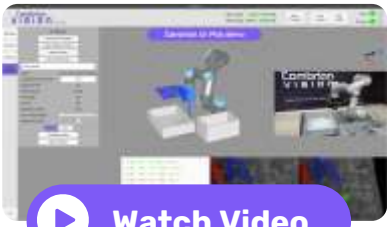
Watch Video



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Watch Video



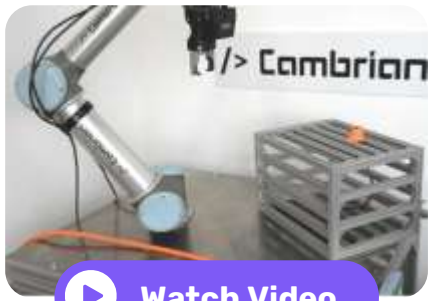
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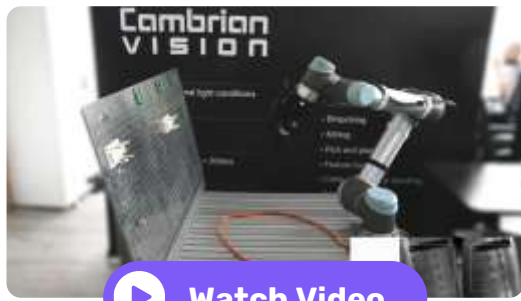
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Watch Video



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<https://vimeo.com/948232588/5e22a73f31?share=copy>