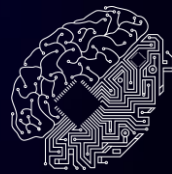MAKING
ROBOTS
UNDERSTAND
HUMANS

ROBOTAI

ABOUT ROBOTAI

- Established in 2018, Israel.
- Funded and supported by Israeli Innovation Authority, Hamlet, Haifa and Private investors
- Develops 3D Vision for robotics and automation
- www.robotai.info

THE MANUFACTURING IS STILL LABOR INTENSIVE. WHY?

- Complicated actions
- Dynamic environment
- Human "eye" understanding
- Coordination
- High cost

Robots must see and adapt to the changing environment

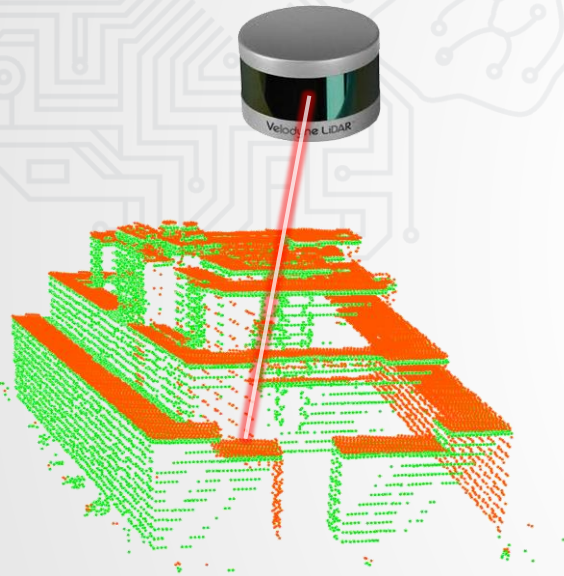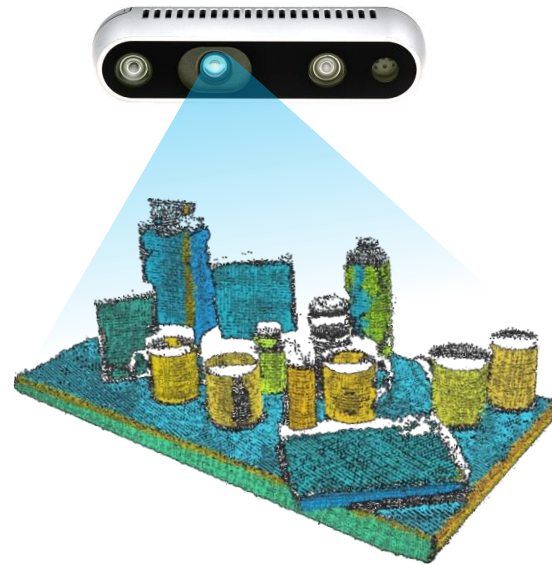Photo: Courtesy of Charlie Kemp/Georgia Tech

ROBOTAI
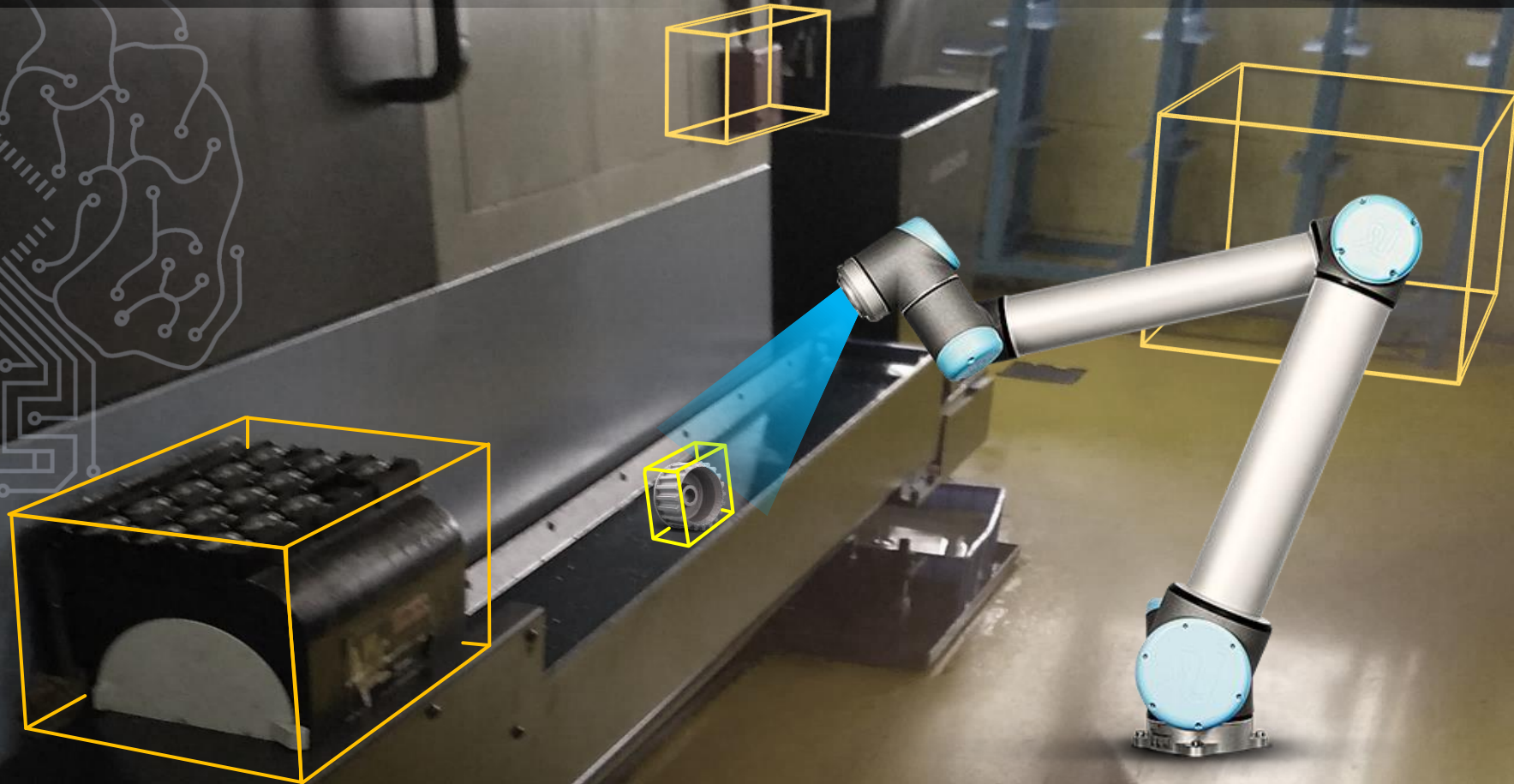
Most robots today are blind therefore limited, robots **MUST SEE** and understand **OBJECTS** like humans
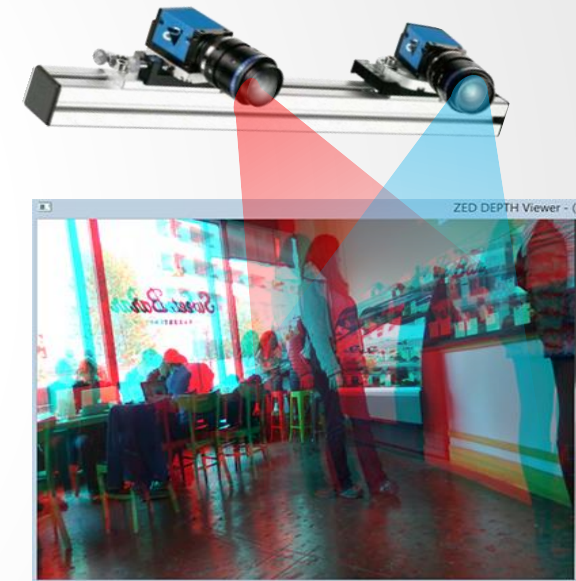
ROBOTAI

3D vision sensors that compute depth

LIDARS

STRUCTURAL LIGHT

MULTIPLE CAMERAS

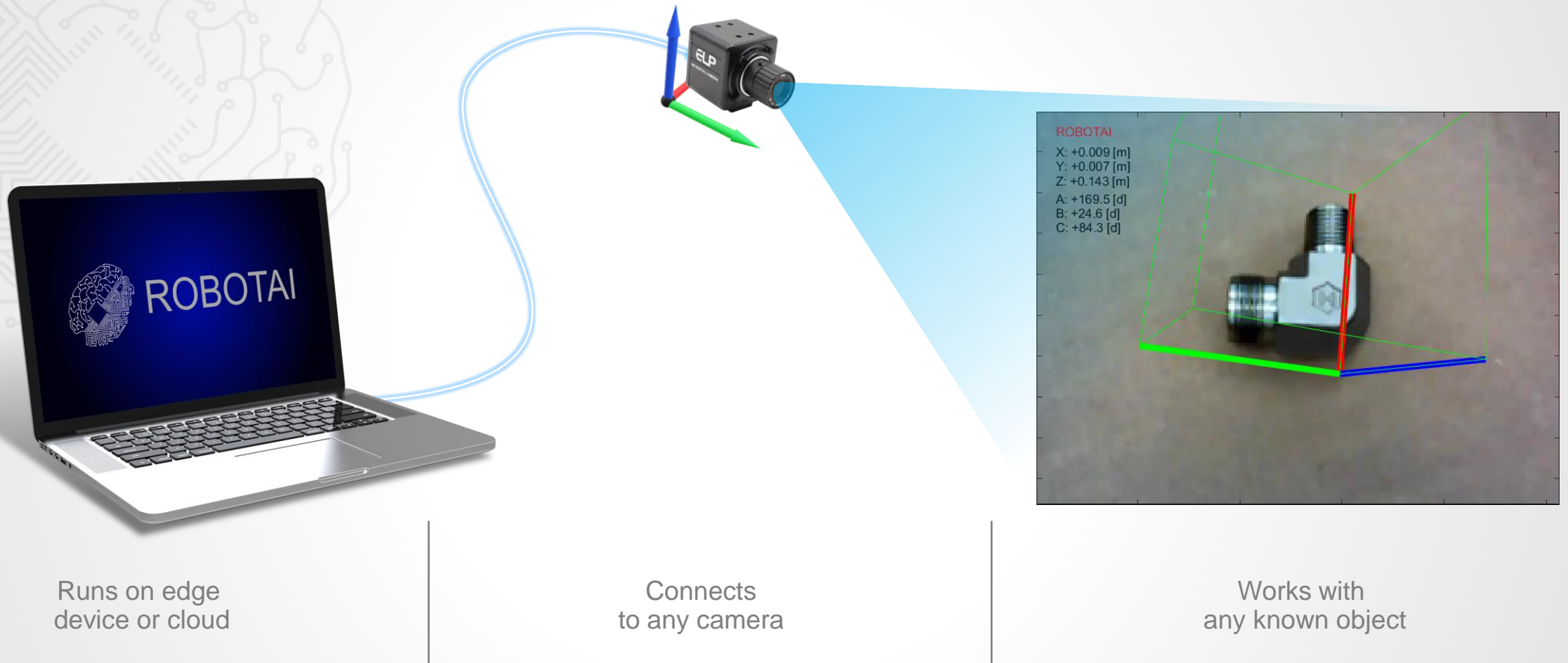DRAWBACKS : non-flexible, complex setup, limited object types

ROBOTAI

We can see in 3D using one eye only

7

OUR IP : Software that transforms any camera into a 3D vision device

ROBOTAI
X: +0.009 [m]
Y: +0.007 [m]
Z: +0.143 [m]
A: +169.5 [d]
B: +24.6 [d]
C: +84.3 [d]

Runs on edge
device or cloud

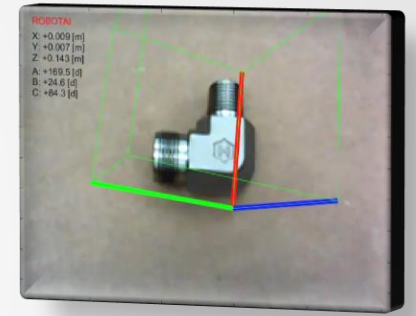Connects
to any camera
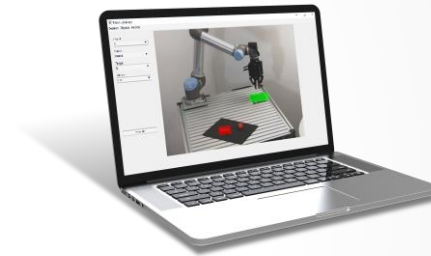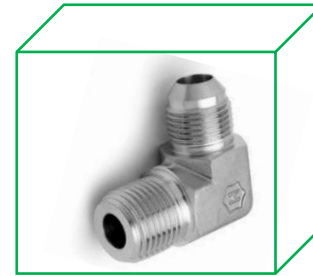
Works with
any known object

AI based software, can recognize and localize **any known object** using a single 2D camera

HOW IT WORKS

We can teach machine to recognize any object, along with its position

LABEL6D

POSE6D

| Object image data | ▶ | Training software | ▶ | Object models | ▶ | Edge software | ▶ | Object pose |

BENEFITS: fast setup, no coding, no special
scanning, no CAD data, adjustable to any object

OUR ADVANTAGES : Simplicity and Versatility

KEY DIFFERENTIATION:

► Camera and Robot Agnostic

► Detects Any Known Object

► Software Only Solution
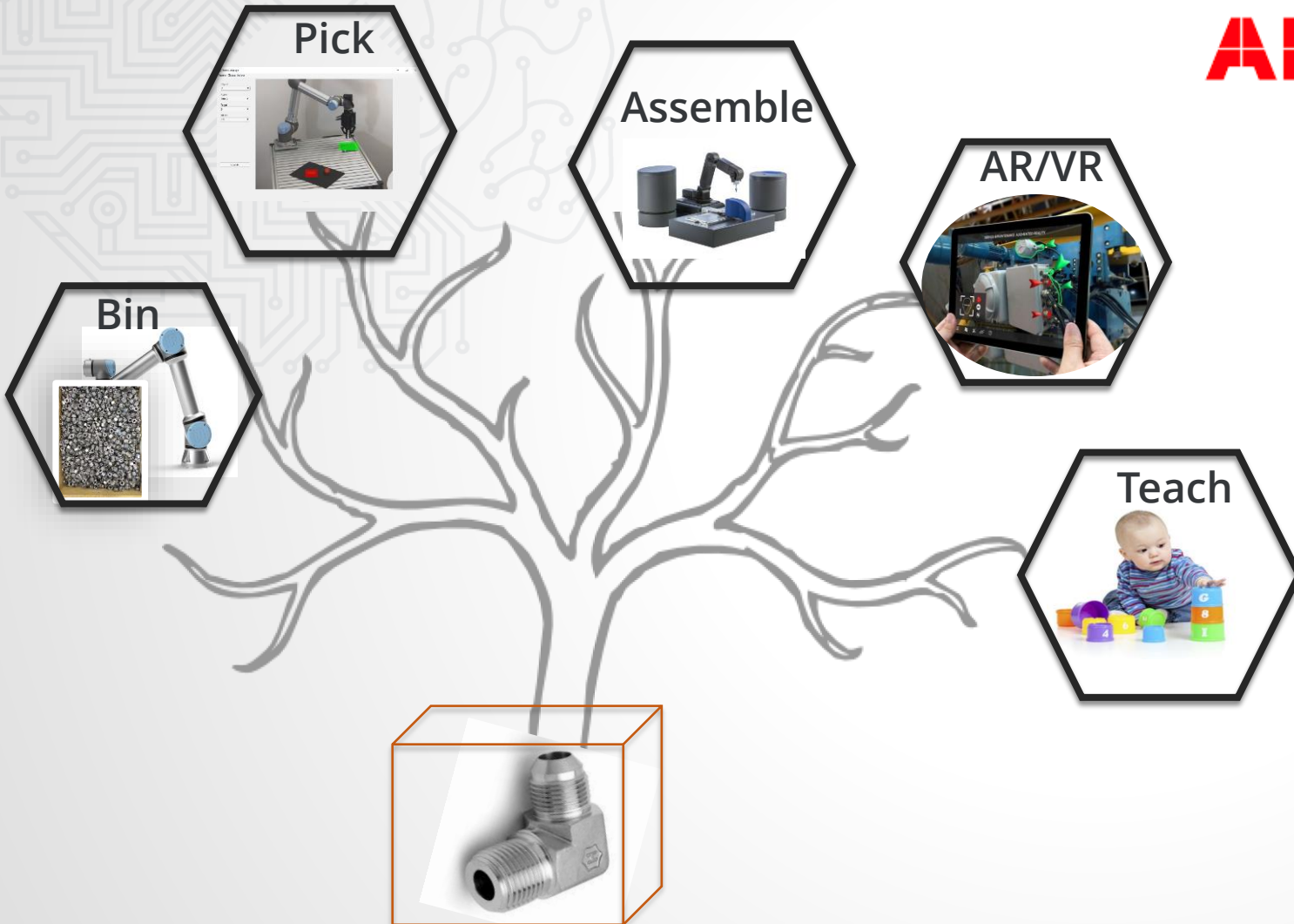
► Fast – 30 frame/sec

► Precision – 0.5 mm

► Flexible

COMPETITIVE ANALYSIS

|	Canon[1]	Osaro[2]	Mech-Mind[3]	Solomon[4]	RobotAI
Sensor Type					
Precision [mm]	+/-2.0	+/-5.0	+/-0.5	+/-1.0	+/-0.3
Scan Time [sec]	1.8	0.5	0.3-0.9	0.5	0.05
Solution Prices [$]	35K	60K	15K	22.5K	3K-10K
Object Types	Specific	Some	Specific	Some	All
System Setup	Fast	Slow	Fast	Fast	Slow

*SELECTED COMPETITORS

MAIN APPLICATIONS & TRACTION

USE CASES

USE CASE: Fast Moving Objects

KEY BENEFITS:

► Fast

► Flexible

► Complex parts
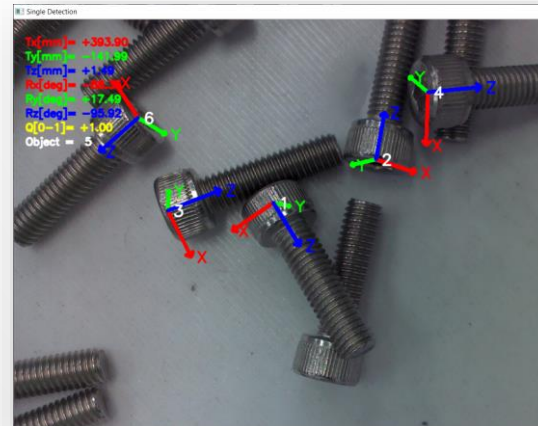
► Fast setup

► Conveyor motion

► Productivity
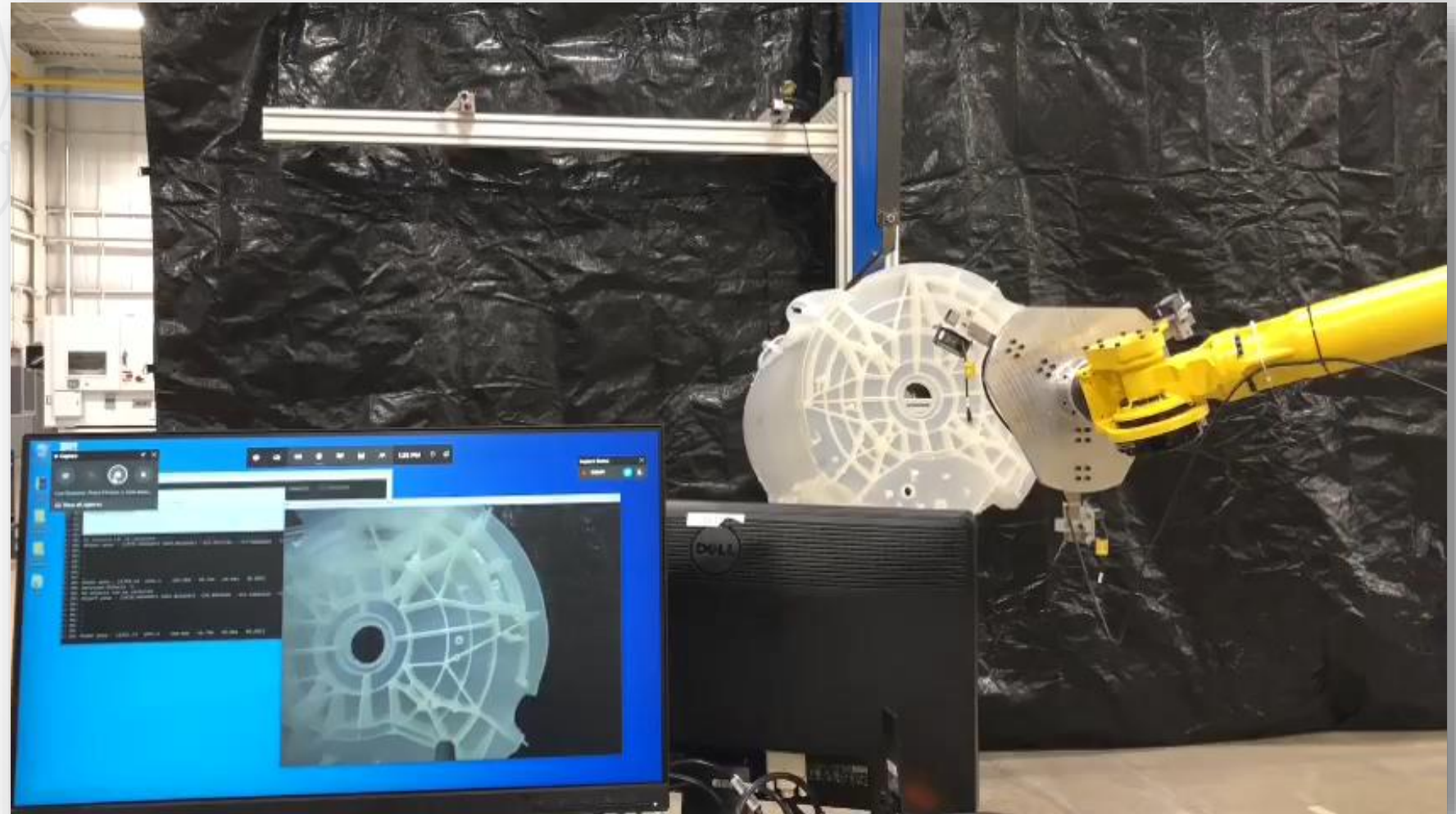
link

USE CASE: Precision – Bin Picking

KEY BENEFITS:

► Fast

► Flexible

► Different Parts

► Fast Setup

► Cost Effective

► Productivity
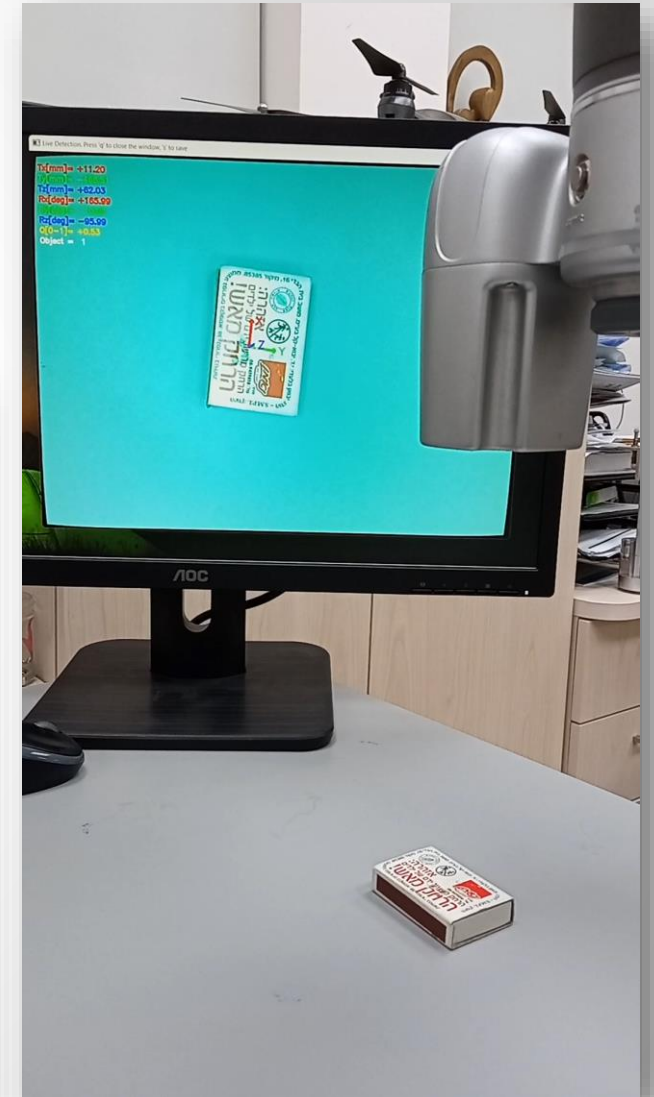

link

USE CASE : Packages and Textures - Logistics

KEY BENEFITS:

► Textures and Pictures

► Flexibility

► Fast tracking

► Robot guidance

link

link
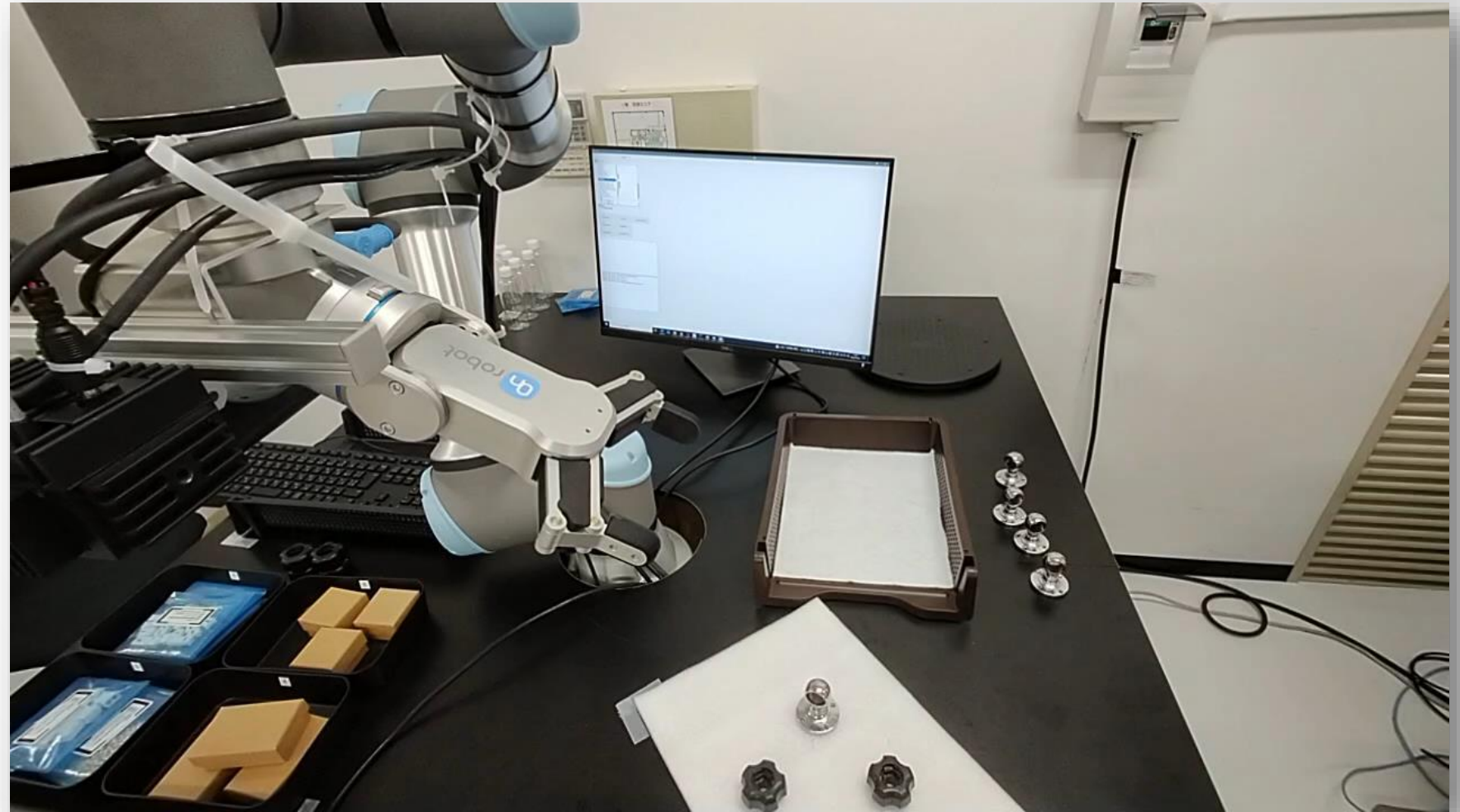
USE CASE : Multiple Objects Handling

KEY BENEFITS:

► Fast

► Short cycle time

► Simple sensor

► Fast setup

► Easy to deploy

► Multiple Objects

USE CASE : Activity Monitoring

KEY BENEFITS:

► Fast

► Short cycle time

► Simple sensor

► Simple setup

USE CASE: Hand Eye Coordination For Robots - Agriculture

ROBOTAI

KEY BENEFITS:

► Fast

► Flexible

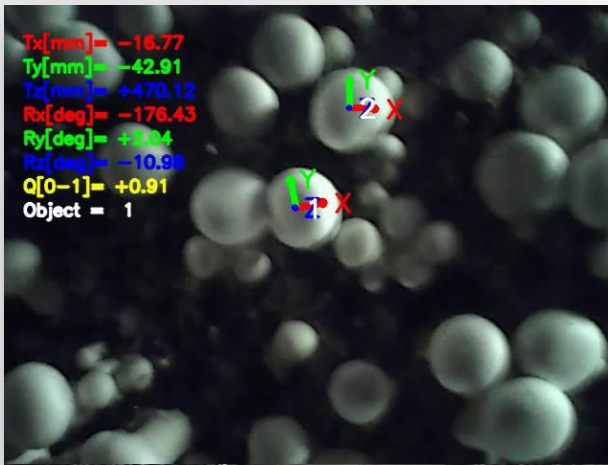► Cost effective

► Fast setup

► Easy to deploy

► Productivity

link

USE CASE : Agriculture

KEY BENEFITS:

► Monitoring

► Flexible

► Cost effective

► Human shortage

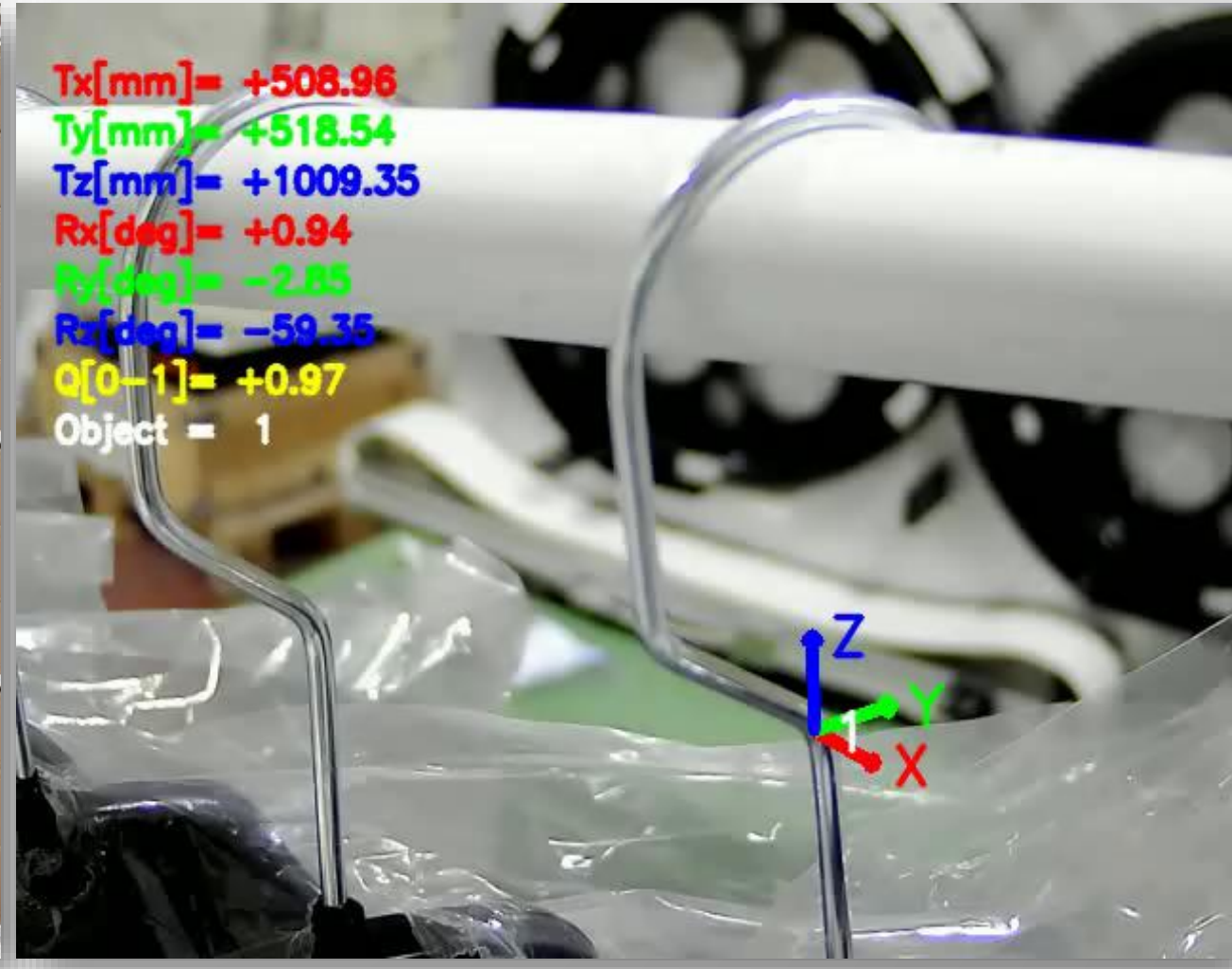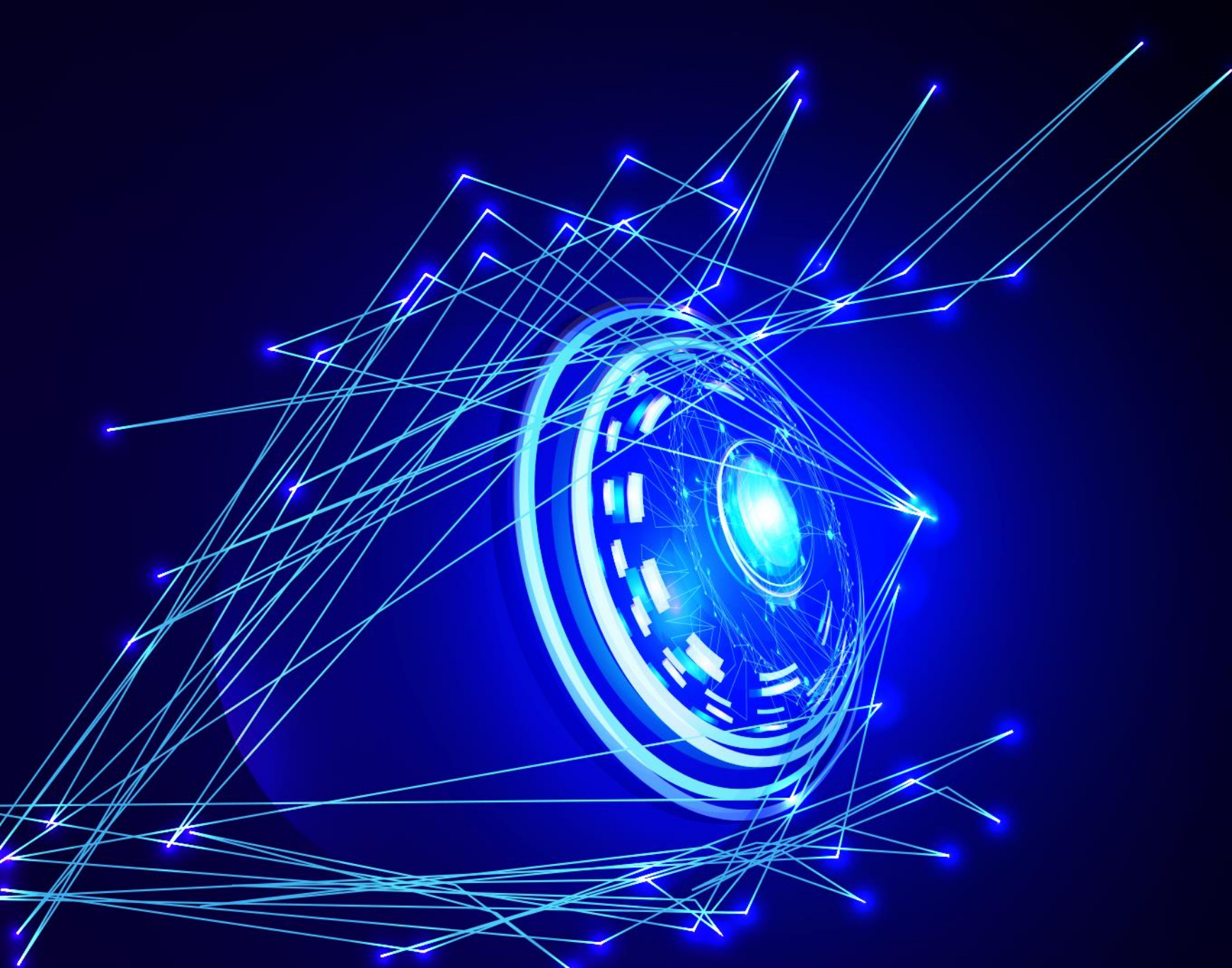# USE CASE : Logistics Picking

KEY BENEFITS:

► Specific Objects

► Flexible

► Cost effective

► Human shortage

Tx[mm]= +508.96
Ty[mm]= +518.54
Tz[mm]= +1009.35
Rx[deg]= +0.94
Ry[deg]= −2.85
Rz[deg]= −59.35
Q[0−1]= +0.97
Object = 1

THANK
YOU

ROBOTAI