



# Cobots and Vision Systems

EPIC Meeting by Mark Gray

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# UNIVERSAL ROBOTS SET THE STANDARD...WITH OUR KEY VALUE DRIVERS

Easy Programming  
Fast Set-up  
Flexible Deployment  
Collaborative and Safe  
Fastest Payback in the Industry

- UR designs and builds revolutionary collaborative robots
- Perfect for all sizes of business
- UR products are so user-friendly that anyone can operate them
- And so affordable that it is worthwhile for anyone to invest in them
- Low total cost of ownership

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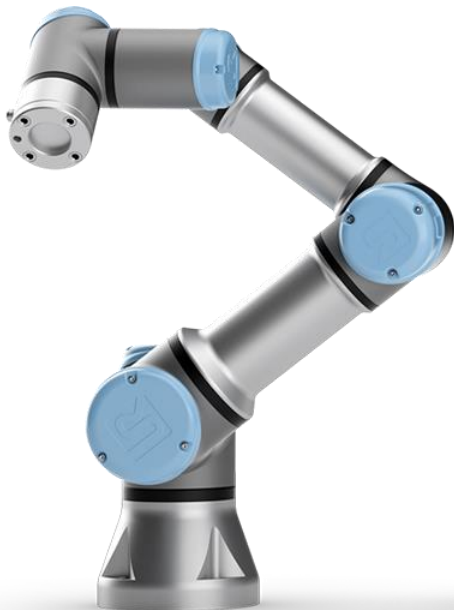
# MEET THE e-Series FAMILY

A collaborative solution for every need

## UR3e

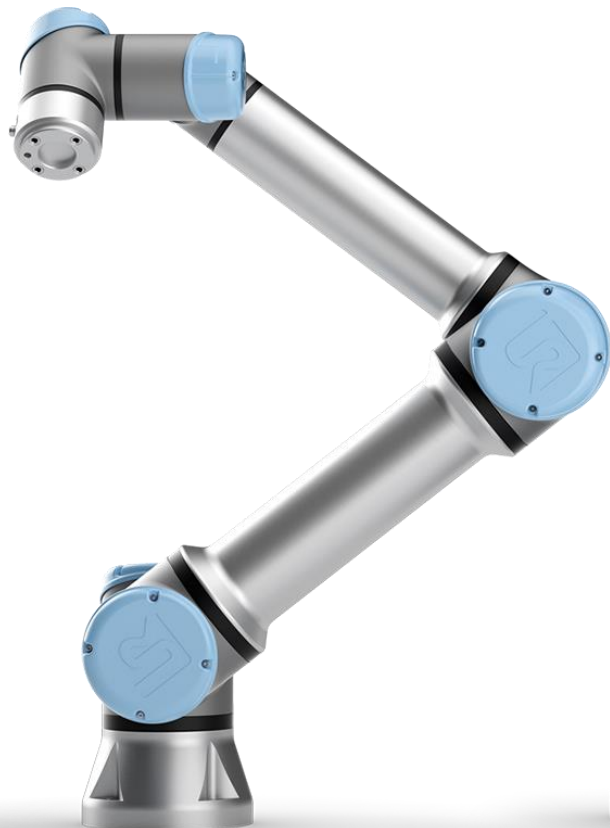
Automate tasks up to: 3 kg  
Working radius: 500 mm

*(Best deployed in tight spaces or on table tops)*



## UR5e

Automate tasks up to: 5 kg  
Working radius: 850 mm



## UR16e

Automate tasks up to: 16 kg  
Working radius: 900 mm

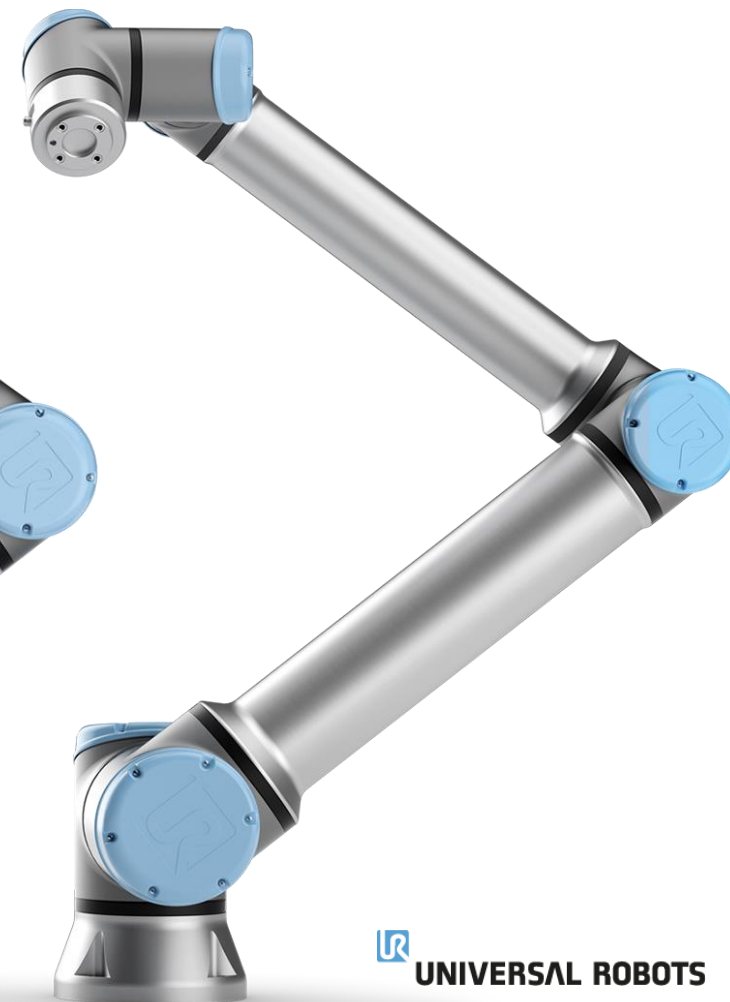
*(designed for heavy-duty applications)*



## UR10e

Automate tasks up to: 10 kg  
Working radius: 1300 mm

*(For tasks across large areas)*



# APPLICATION BENEFITS

- Easy programming interface (polyscope)
- Flexibility ( hand guiding)
- No need for machine guarding
- High repeatability (30 microns)
- Reduced footprint
- Less than 1 hour to set up out of the box
- Easy to set up digital handshakes with external systems
- Ability to achieve a clear field of view and control localized lighting



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Case study

# COMPREHENSIVE LOGISTICS

## *Final assembly inspection*

### Challenges



Human inspection was 80% efficient with a need to get to 100% for every part



The need to reduce costs and record results was a challenge



Just in time manufacturing leaves no margin for error

Case study

# COMPREHENSIVE LOGISTICS

## Solutions:



Implemented the first fully automated vision cell to provide 100% inspection of every assembly and record results



Inspection time is constant for every part improving cycle time for the line

## Results:



The UR10 robot proved flexible enough to add inspection points into the process without sacrificing overall cycle time



Cost savings and quality improvements paid for the robot within 4 months.



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Case study

# BMW DINGOLFING

## *Panel Gap Measurement*



### Challenges



Four UR10 robots have to work along side personnel on the production line to carry out gap measurement



Solution had to be flexible enough to work with every variant on the line and have a low impact installation



Over 15 critical control points had to be measured with a high degree of accuracy and send the data to a central MES system

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Case study

# BMW DINGOLFING

*Four UR10 robots sweep the vehicles to carry out 100% of panel gaps in the desired takt time*

## Solutions:



The robots move at a constant velocity to position the 3d cameras over the gaps to a repeatability of 50 microns



Inspection time was reduced by up to 5 seconds per vehicle

## Results:



The UR10 robots increased the amount of data analysis from each car to improve processes upstream



Cost savings and quality improvements paid for the robots within 12 months.



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# ROBOMINDS AI SORTING SYSTEM

The **RoboBrain AI system** is a sorting system that greatly simplifies the picking of random items.

The robobrain product range is the central basis for all application scenarios: its unique design makes it possible to control different components like robot arms, grippers and vision systems without complicated teach-in processes. Thus, we are able to tailor-make solutions to individual practical requirements quickly. At the same time, the system enables our customers to integrate and roll out the robobrain applications themselves into their respective company processes in an uncomplicated manner.



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 **UNIVERSAL ROBOTS**



Thank You

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