

## Smart robotic arm for sorting objects

A smart robotic arm for sorting objects!

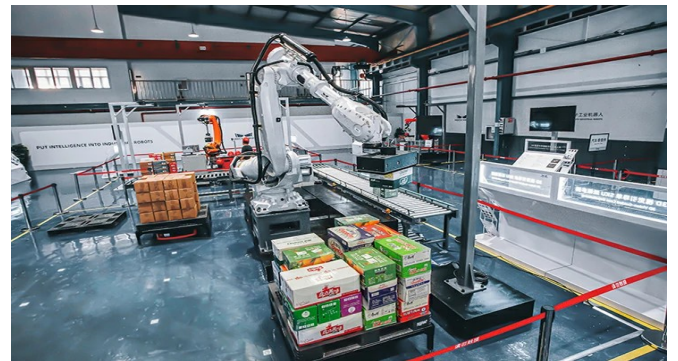
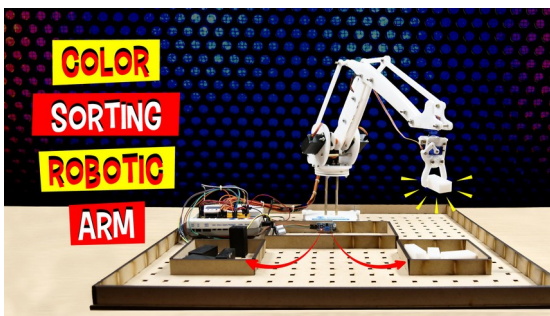
Imagine a robot arm equipped an AI camera that can detect objects. This arm objective is to pick objects, identify them, sort them, and show information about them. To make it simple: Assume we have:

Shapes: Spheres & Boxes.

Colors: Red, Yellow, & Green.

Output:

- 1- Total number of each of Boxes, Spheres, Red, Yellow, & Green objects.
- 2- Volume of the shapes.
- 3- Recommended box size to fit all objects.



The input data from robot detect object's color, shape and count number, then save the data excel file called dataset

	A	B	C	D
1	Object	Color	Dimension cm	No. of objects
2	Box	Red	20	250
3	Box	Yellow	80	500
4	Box	Green	40	400
5	Box	Yellow	60	300
6	Box	Red	70	450
7	Box	Green	30	250
8	Sphere	Green	30	300
9	Sphere	Yellow	50	400
10	Sphere	Red	10	900
11	Sphere	Green	40	100

Processing the data from Robot by using python and package like pandas, numpy, openpyxl. Calculating volume of objects and boxes then output the no of boxes required for each shape then total no. in excel file called result.xlsx

A	B	C	D	E	F	G	H
shape	color	Dimension cm	Number of objects	volume of Shape (cm3)	Volume of box (cm3)	Maximum number of objects in one box	Total number of boxes
Box	Red	20	250	8000	40000000	5000	1
Box	Yellow	80	500	512000	40000000	78	7
Box	Green	40	400	64000	40000000	625	1
Box	Yellow	60	300	216000	40000000	185	2
Box	Red	70	450	343000	40000000	116	4
Box	Green	30	250	27000	40000000	1481	1
Sphere	Green	30	300	113097.335529233	40000000	353	1
Sphere	Yellow	50	400	523598.775598299	40000000	76	6
Sphere	Red	10	900	4188.79020478639	40000000	9549	1
Sphere	Green	40	100	268082.573106329	40000000	149	1