

robotics 101

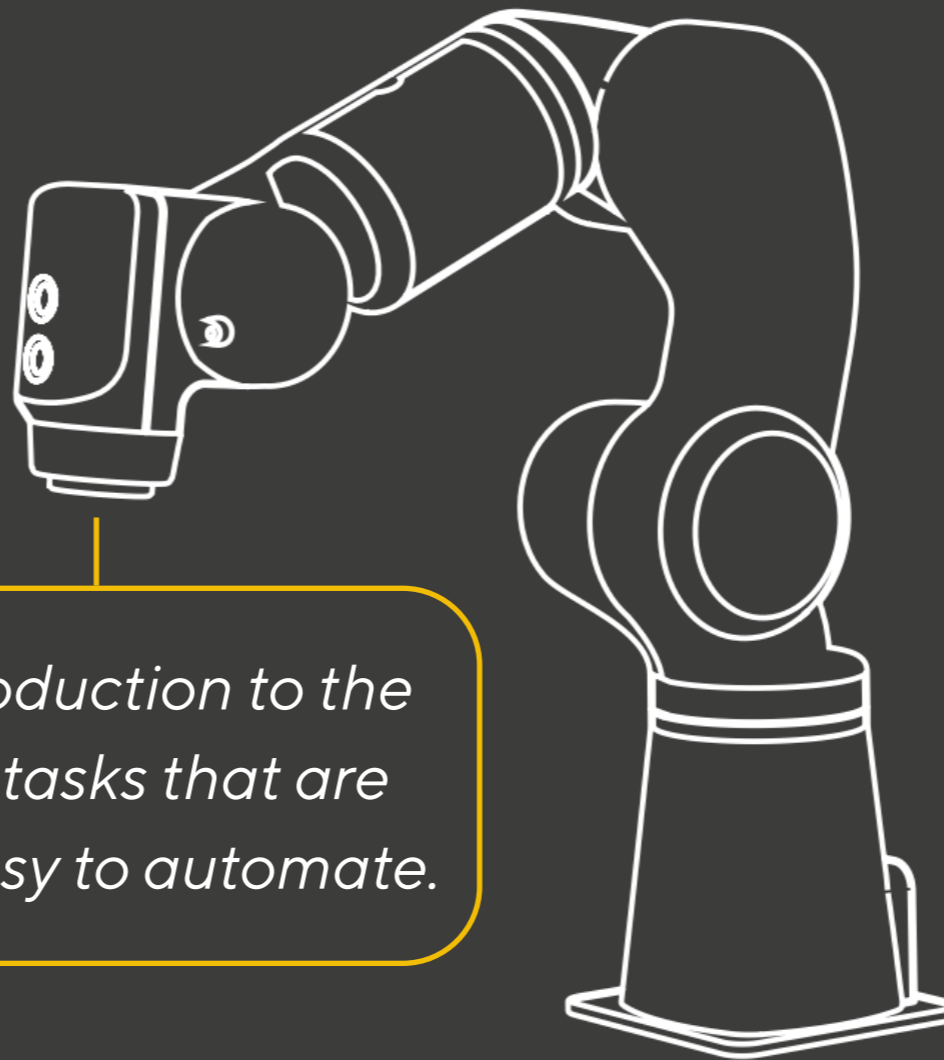
from
your dining room table

Friday, 1st May 2020



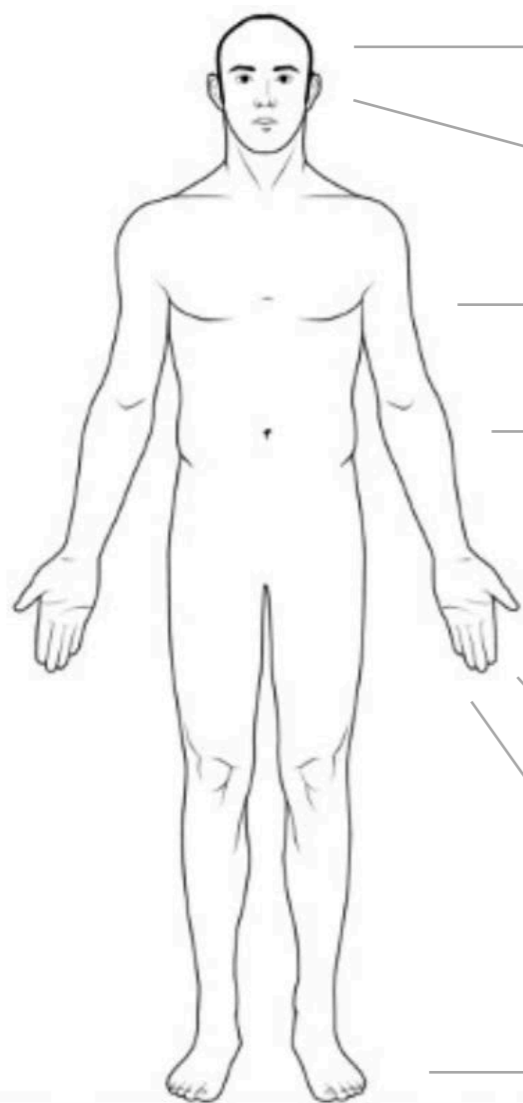
Automata

Think like a robot



*An introduction to the
sort of tasks that are
really easy to automate.*

Human beings are high spec



Complex processing power

High Definition 3D vision system

360 Rotational Axes

High Payload Capacity

Live Feedback from End of Arm Tool

Advanced Torque Sensing

5 High Precision Gripper Fingers

Pressure Sensing Fingers

Portable

Human beings are low spec

We Get Bored.

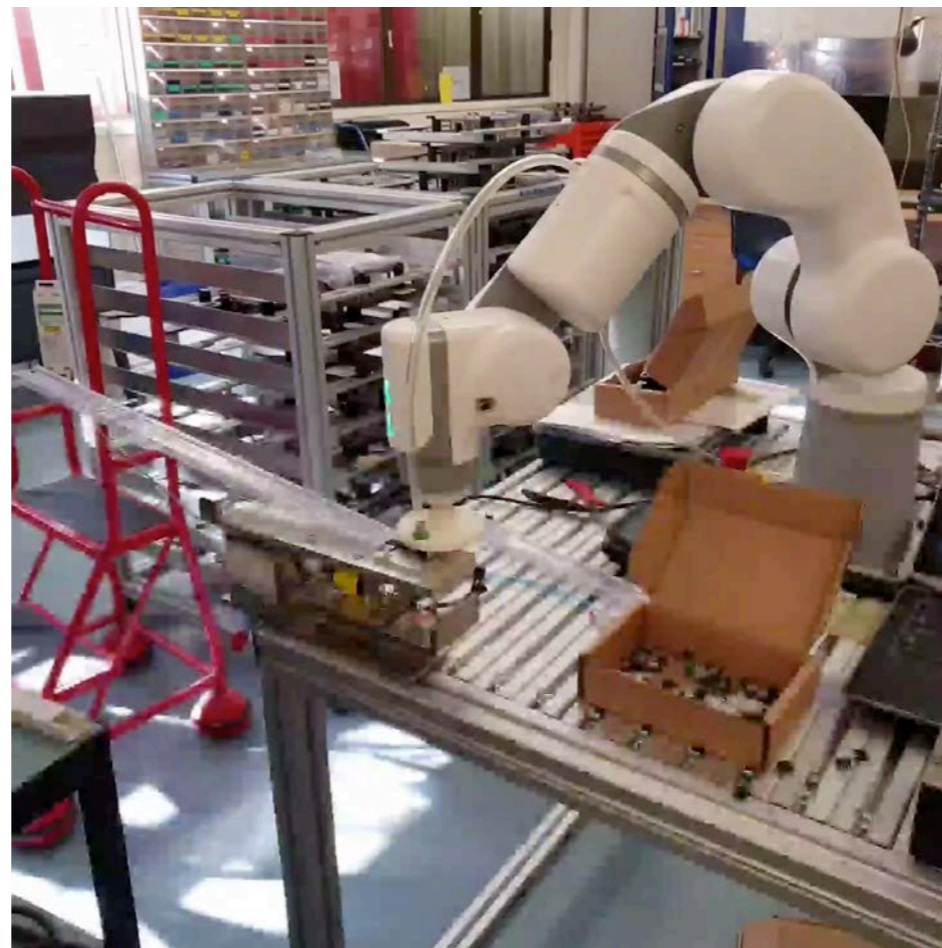
First Tasks to Automate

- Can you do it with your eyes closed?
- Can you do it without a sense of touch?
- Does a person quickly get bored of this?

Can you do it with your eyes closed?

- Are parts presented in a consistent manner?
 - If not – you'll need a parts presentation system
 - Bin picking is difficult
- Are other moving parts sufficiently accurate?
- Is the motion of the arm consistent, or does it need to respond to external inputs?
- If you are mounting a camera does it need to feed back to the robot?

Can you do it with your eyes closed?



Can you do it with your eyes closed?



Can you do it with without a sense of touch?

- How can you pick up your parts?
- Could they be picked up mechanically?
- Could they be picked up by a vacuum?
- Could one gripper pick up everything you need?
- Do you need to manipulate parts in the air?

The answer is YES

Then there's a good chance you can program it yourself.

- **Programming time c. 30 mins**
- **Capital Costs - c. £8,800**

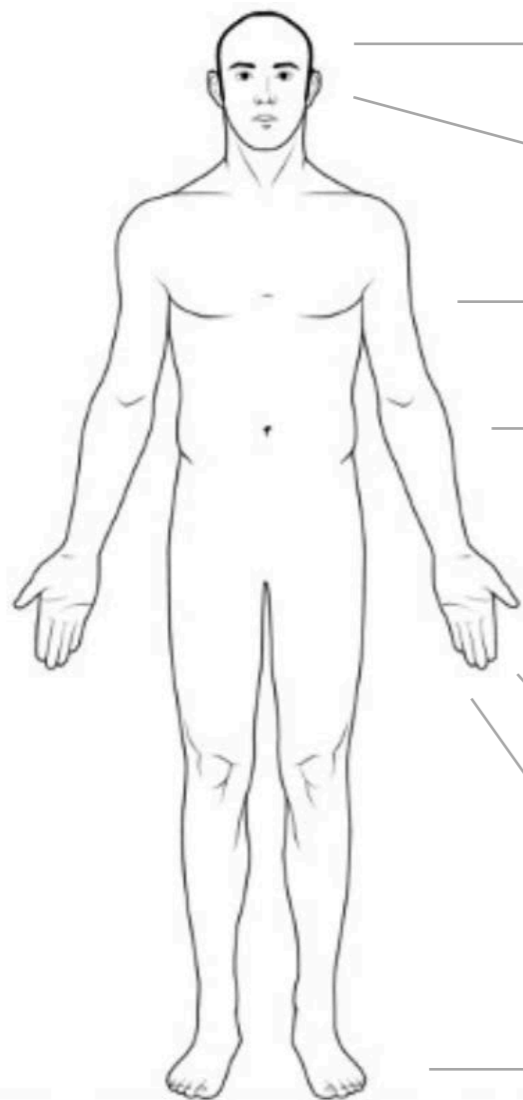
These are the tasks we are going to teach you how to program today.

How to think like a robot?

- Find the task you want to automate
- Break it down into different steps
- Observe every step - break these down as small as possible
- What 'features' do you need to complete that step?
- Turn off the features you don't need

Low Features > Low Complexity > Low Cost

How to think like a robot?



Complex processing power	\$\$
High Definition 3D vision system	\$\$\$
360 Rotational Axes	\$
High Payload Capacity	\$\$\$
Live Feedback from End of Arm Tool	\$
Advanced Torque Sensing	\$\$
5 High Precision Gripper Fingers	\$
Pressure Sensing Fingers	\$\$\$
Portable	\$

Thank you

