Artificial Intelligence and Robotics.

What have Artificial Intelligence (AI) and Robotics got to do with you?

Employers are predicting that within the next 20 years, many if not most workplaces will consist of a mix of humans and intelligent robots. An intelligent robot is one that can think for itself and react to situations, rather than a robot which simply follows a program to do the same thing over and over. An example of the latter would be a robot that paints cars, and indeed this is how most cars are painted on the production line.

AI can be entirely computer based, meaning you could talk to it, it could control things through the internet or by remote switches, but couldn't physically do anything for itself. To be truly useful, AI could be built into a robot that can them move itself around its environment.

An intelligent robot that uses AI could be something like a robot that looks after the elderly. It could prepare meals, have a conversation, remind about or dispense medication and use a variety of sensors and facial recognition to keep an eye on the daily health of the person it was looking after. It wouldn't just follow a set routine, but would react to what was going on around it, and to what the person was saying or doing. The best AI programs learn as they are being used—so making it's own constant improvements to how it works.

A true AI uses learning (acquiring information and rules) together with reasoning (using the information and rules to make decisions) to decide what to do. It can react to situations it has not encountered before.

Why do we need AI and robots?

There are lots of different circumstances where robots could be the answer to some difficult problems.

The population is aging, as people are living longer due to improved medical care, better food and living conditions. This means there are more people who need care. This care is very expensive for governments to provide and wages for carers tend to be low, so it is difficult to find enough people to fill the required roles. Robots could be used to help keep people independent in their own homes.

Dangerous environments such as nuclear power plants, mines, unstable buildings, areas of extreme heat or cold, deep water or even space could all be safely explored using robots. Rescue work, maintenance work, or surveying could all be done using robotics, lessening the risk to humans. These could be AI controlled, or remotely controlled by a human—or maybe even a combination of both.

Can you experience AI at school or at home now?

Yes you can! There are a number of projects on the internet where you can have a text chat with an AI bot. Try Googling AI bot chat—you'll be surprised how many there are freely available on the internet.

Having a chat with an AI bot on the internet can even help research projects, as many of them are provided by Universities and companies who are refining and developing this technology.

AI technology is already commonplace—devices like Amazon's Alexa, Apple Homepod and Google Home are freely available to buy and use. They offer an interactive experience and can be used as part of a smart home system.

AI and Robotics Vocabulary

1. Artificial Intelligence _____

2. Predicting _____

3. Production line._____

4. Its environment._____

5. Acquiring _____

6. Independent _____

7. Remotely controlled _____

8. Bot_____

9. Googling_____

10. Refining _____

11. Developing _____

12. Commonplace_____

13. Smart home system. _____

14. Sensors_____

What else would you like to know about AI or Robotics?