technocamps

Inspiring | Creative | Fun
Ysbrydoledig | Creadigol | Hwyl

Artificial Intelligence (AI) Workbook

i.t.wales
www.itwales.com

Swansea University
Prifysgol Abertawe

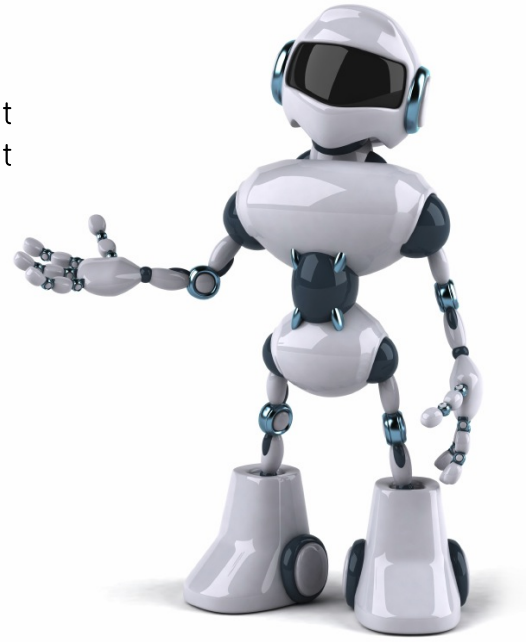
Prifysgol Aberystwyth University

Prifysgol Bangor University

University of South Wales
Prifysgol De Cymru

ESF
Llywodraeth Cymru
Welsh Government
Ewrop & Chymru: Buddsoddi yn eich dyfodol
Cronfa Gymdeithasol Ewrop
Europe & Wales: Investing in your future
European Social Fund

Artificial Intelligence



Artificial Intelligence is the development of intelligent machines and software, similar to human intelligence but applied in a different manner.

Can machines apply problem solving or logic?

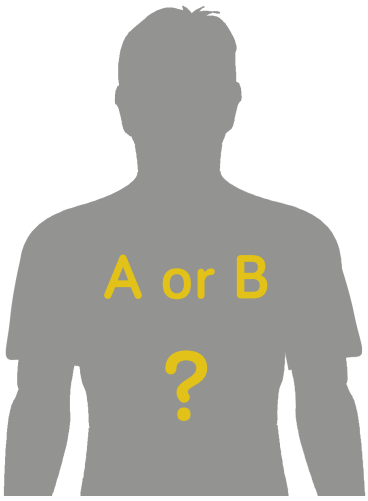
Can they recognise natural human interaction across a variety of languages and localised accents?

Can robots and machines underst and emotions and respond appropriately?

To begin, let's consider how many different ways we can interact with computers.

1) Interaction

Think about all the different types of technology you have encountered. How many different ways have you interacted with them? For example, have you used buttons or perhaps a touch screen when using a phone? What about the games consoles you have used at home or at a friends, how did you interact with those?



In 1950 Alan Turing posed the question "Can computers think?". He designed the "Turing Test" assessing a machine's intelligence. The test involves a human judge, engaging in a text based conversation with A and B. A and B are a human and a computer, but which is which is hidden from the judge. It is the judge's job to tell which is which.

If the judge cannot tell them apart, or gets them wrong, then the machine is said to have passed the test and is considered intelligent.

2) Can computers think?

Do you believe that computers can think like humans? What do you think of the Turing Test? Do you think that if the machine pretends to have a conversation like a human that it should be labelled "intelligent"?

Artificial Intelligence

3) The Telephone Test

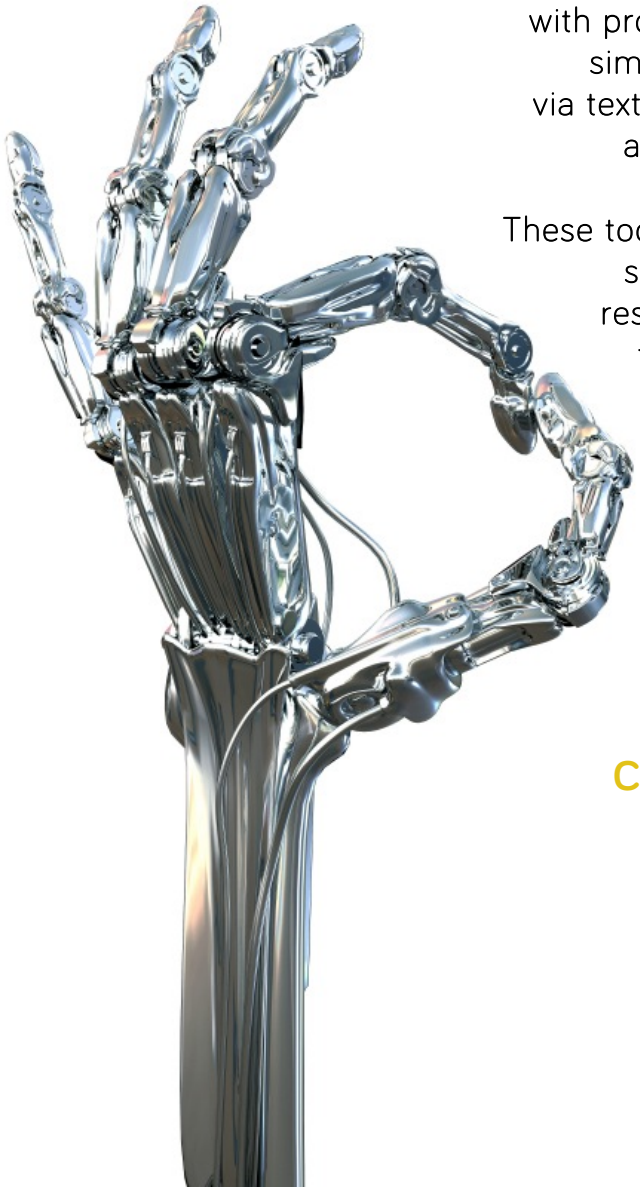
Separate into groups of 3, person **A**, **B** and **C**:

- **A** and **B** are to take a mobile phone into another room, hidden from person **C**.
- **C** will be messaging the other player's mobile phone.
- **A** and **B** are to decide who will be responding to the messages.
- **C** will be the judge, trying to work out whether it is **A** or **B** responding.

This activity is similar to the Turing Test, where the judge has to guess who (or what) is responding. Here C has to consider clever questions, trying to guess who is messaging back.

Swap and take turns sending messages and being the judge.

Now that you are familiar with how we can distinguish between different types of human onversation and acknowledging a variety of responses from different people now you can test out human vs machine conversations.



You can look at online tools enabling us to simulate conversations with programs rather than real people. Most are created to simulate an "intelligent" conversation with a user either via text or through sound, fooling a user in to thinking they are chatting with a person and not a clever program!

These tools use key word recognition, pattern matching with sentence structures and the use of pre-programmed responses created to purposefully contain to progress the conversation. The illusionof the machine or tool understanding is also in its ability to pull phrases and text from the user's responses e.g.

User: How does it feel to be a computer?

ChatBot: What do you mean how does it feel to be acomputer? I'm a human of course!

Artificial Intelligence

4) ChatBot intelligence

Come up with 3 questions to ask a ChatBot. Try to think of certain questions that would assist you during a "Turing Test" to work out if who you are talking to is a program or if it is a real person!

Question	Reason

Consider the manner in which humans converse, how natural language allows us to interpret the use of slang or formal written word vs informal relaxed discussions. Even signing has developed easier methods of communicated and emphasising emotion.

Formal languages such as programming languages, structured strictly compared to informal use of natural language are how we give instructions to computers, in which syntax rules are applied and there is less freedom to explore the language and the variety of expressions that could be used to pass across a singular instruction.

Artificial Intelligence

5) ChatBot Test - CleverBot

Go to www.cleverbot.com

Write 3 questions below that you would want to ask Cleverbot to see whether it was a human or a computer. How would you trick it with well thought out question structures to confuse the ChatBot?

Question	Reason

6) ChatBot Test - Jabberwacky

Go to www.jabberwacky.com

Write 3 questions below that you would want to ask Jabberwacky to see whether it was a human or a computer. How would you trick it with well thought out question structures to confuse the ChatBot?

Question	Reason

Artificial Intelligence

7) ChatBots

Try and ask the same questions to CleverBot and Jabberwacky.
What differences do you notice with the responses?
Do you think that one of the ChatBots is “more intelligent” than the other?

technocamps

www.technocamps.com

@Technocamps

Find us on Facebook