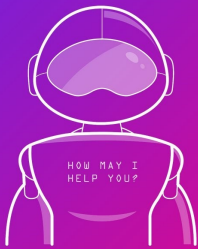


## AN INTRODUCTION TO ARTIFICIAL INTELLIGENCE

ARTIFICIAL INTELLIGENCE (AI) hits the headlines a lot. Whether it's threatening to take your job or offering to be your virtual assistant, this latest development often promises to improve your life in some way. But how? Do we really need AI to be more efficient or happier? The amount of information out there can be confusing, and it doesn't help when a lot of it is conflicting or debatable. It's time for a reality check.

One thing everyone agrees on is that, love it or loathe it, AI is here to stay and its influence on your life is only going to increase. This guide will inform you of the potential impact of AI, what you can expect from it and what you can (hopefully) look forward to.






### WHAT IS AI?

YOU'LL NO DOUBT BE FAMILIAR with computer programs and software. You don't have to be an expert to see how technology is assisting us – automating tasks, entertaining us, managing our data...the list goes on.

The key difference with AI is the ability to learn – this term refers to software which manifests some kind of intelligence. It might be man-made, but it can operate in a way that's based on how the human brain works. That's where it gets a bit confusing. How do we demonstrate, test or measure intelligence?

Think about it like this – if you carried out a task and felt like you used your natural intelligence, even in a small way, then if a program or machine could perform the same activity, it would have shown artificial intelligence.

The aim of AI is to learn, adapt and think. It must demonstrate behaviours we associate with human intelligence. That can include any combination of the following:

-  Planning
-  Problem-solving
-  Reasoning
-  Learning
-  Perception
-  Recognition

However, for this to happen, you need to get machines to a point where they can treat human behaviour computationally. A huge amount of creativity and complexity is involved with human intelligence. That's why developments are best split into two, with much more progress in the former:

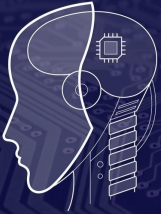


### NARROW AI

IT'S LIKELY YOU'LL HAVE HEARD OF, or interacted with, some form of Narrow AI. It's evident in Apple's Siri, Tesla's self-driving cars and Amazon's shopping recommendations. Narrow AI systems can learn how to do specific activities and operate within that pre-defined range. They can't take on tasks beyond this.

In other words, Narrow AI programs can book a hotel for you, or even flag wear and tear in escalators. But the same system can't do both. Several Narrow AIs can be coordinated to work together, though, like in self-driving cars. Some programs can use lasers to record road conditions and others will respond accordingly, e.g. braking and stopping to avoid a crash.

Even though it's also referred to as 'Weak AI', the technology is impressive and has been changing how we live and work for some time. It can do everything from interpreting video feeds from drones, to recognising potential tumours from X-rays.



### GENERAL AI

GENERAL AI is a little bit further out of reach, although some developments have recently been made. It refers to an adaptable intellect, one that can be applied to different tasks.

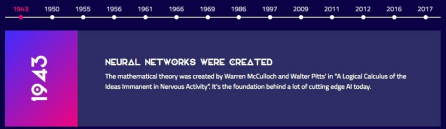
Created with mechanisms to make decisions in entirely new situations, it can re-use knowledge as humans would do. In other words, it's an intelligent system capable of thinking and reacting in a similar way to us. General AI can swap between tasks and use accumulated experience. If it was faced with a new task, it would still be able to find a solution without human intervention.

As well as all the typical computer science knowledge, AI experts need to know about human psychology and biology in detail if they're going to create a General AI.

After all, humans are uniquely amazing. We can think abstractly. We can create thoughts and ideas out of nowhere. We can solve problems. Getting a program to replicate this isn't easy. For this reason, experts are divided over whether it's even a potential reality.

### KEY INFLUENCERS & MILESTONES

YOU MIGHT HAVE SEEN General AI demonstrated in films, but its usefulness isn't restricted to the big screen. A lot of real development has gone on with AI. Here's a summary of the key moments in history:



These are just a few key milestones in AI's history, ones which stand out as huge leaps forward in what we thought was possible at the time. Yet, developers and scientists continue to surprise us with the continual advancement of AI.