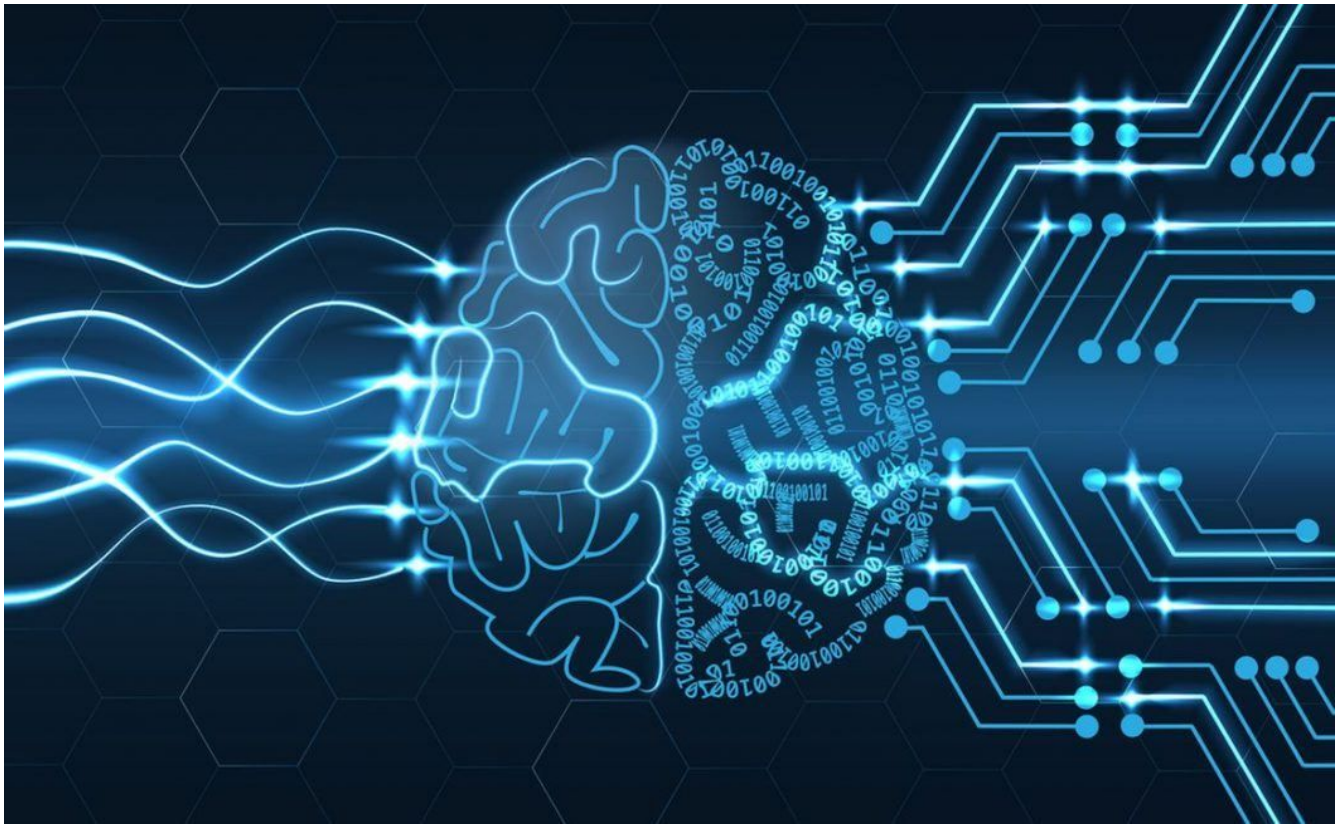
HCI INTELLIGENCE

Assignment One



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INTELLIGENT USER INTERFACE

An intelligent user interface involves some aspect of artificial or computational intelligence. Human Computer Interaction seeks to provide an understanding of the human user and the computer system, in an effort to make the interactions between the two easier, more efficient and more satisfying. Most interface agents achieve personalisation by learning a user's preferences in a given application domain and assisting them according to those preferences (Höök, 2000).

The Turing Archive for the History of Computing (alanturing.net, 2017) defines AI as “the science of making computers do things that require intelligence when done by humans.”

Task-orientated AI can be found at work in many places, from the Netflix recommendation engine to the natural language processing used in Amazon’s Echo. AI is a broad a term that has been used by companies who want to make their software programmes sound smarter than they really are.

We learn by watching others engage in different behaviours involving attention, retention, reproduction and reinforcement (Holland, 1991). For AI reproducing behaviour is a limiting factor as it does not have the physical capability to reproduce all our actions even though they can observe them. In 1966 Sternberg likened our information-processing approach to that of computers but did not add that along with stimuli, we require cognition (Roznowski, 1993). Cognition is the process of receiving, processing, storing and using information, it is the mental processes underlying our ability to perceive the world, enabling us to remember, discuss and learn from our experiences. It includes functions such as perception, memory, language and thought. This is difficult for AI to emulate fully but its advantage is that it can focus its attention on many tasks whereas we must be selective in terms of the sheer mass of stimuli which limits our ability to keep track of all events. We can see this in the Volvo advertisement which depicts a distracted driver in a car which can recognise a child crossing the road and is able to stop without harming the child. AI and cognitive computing systems are based on the ability of machines to sense, reason, act and adapt based on learned experience and will be able to relieve us of many labour intensive tasks.

Voice recognition software listens to what the user says, interprets the sounds, and displays the information on the screen. Among the better known Virtual personal assistants Amazon’s Alexa, Apple's Siri, Microsoft's Cortana, and Google Assistant.

A user can either speak into their tablet, phone or pc for these interactions or use one of the many smart speakers which can be positioned around our homes, offices or in our car to relay commands to the AI of choice. These speakers connect to the users AI of choice and is completely capable of controlling your smart home, so you can simply connect all your smart home devices to the speaker, and control them with your voice.

The most basic advantages of AI are cost reduction, speed, flexibility, reliability, durability and duplication. An AI system can perform the tasks of several workers thus cutting wage costs, can respond immediately in addition to having no time limitation. It has no moods like humans, are designed to last for extended periods of time and can be used repeatedly (Love, 2017).

They can be expensive to buy, operate and maintain due to the specificity of each one's capabilities. They cannot be used in isolation without the presence of human beings. They can only handle specific tasks that they are designed for e.g. an AI designed for driving a car cannot be expected to be an expert in the medicine field.

In conclusion, artificial intelligence systems have been useful tools in solving complex problems that are seen to be beyond the level of human thinking. Although the characteristics of these systems are drawn from human intelligence, they can exhibit more intelligence than the human beings themselves. We are at the start of the AI revolution and more improvements are likely to be seen soon.

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