Example of case study on structure of computer systems

Education, Learning

Structure of Computer Systems

Humans are still superior over computer systems. However, one of the major roles of computer scientists is to create programs to enable computer devices to imitate how humans behave and think. It is one of their goals to create systems that simplify the lives of people. With the current trend of how computers are used in the daily lives of humans, it will not be far when humans will just sit in a corner with their remotes on hand or in front of their computers while the programmed machines will do the work for them.

One of the focus of recent computer studies has been on studying the actions of humans so computers will be programmed to help them specially with regards to decision making. Today, it is a well-known and acceptable fact, that because of the numerous technological advances, humans are trained to multi-task. A person is holding her cellphone and posting on her social media account while reading an e-book. While working, her facebook account is open and when a message pops up, she takes time to check on the message not knowing its importance, then takes time to answer the message before going back to the work she is currently doing. This has been the case for a quite sometimes. (Cercui, 2002)

Because of the multi-tasks sometimes, humans find difficulty in coping up with the things she needs to do all at the same time, in addition to the fact that some of the things she spent time on does not really need immediate attention. Computer Scientists see that one way to solve this is through the use augmented cognition. The aim of this technology is create a program that determines the mental state of the user so that when she is in a multitasking situation, unimportant notices to her will not be delivered while

she is still busy. Only messages related to her current mental state will be delivered. Further, it is also the aim of the concept that if a person is angry with something, then the computer must not give her message notices that can make increase his anger. Only messages that helps ease the current mental state will be delivered to the user.

In order to implement and come up with a reliable solution to this problem, several factors must be checked. First, this system would need high tech and sophisticated hardware with sensors to be used in collecting the physiological characteristics of humans. This would require not only the use of regular computers but also technologies used in human machine interactions especially those involved in collection of data for measuring the brain activities. With regards to the information systems that will be used to process the data collected, these must focus on sensing the limitations of the users or sensing what the users' needs. This requires a lot of study relevant to the physiological behaviors or humans and transferring such into well-accepted algorithms that would then be used in processing the data collected.

Augmented cognition is not a simple thing to do. First, before coming up with the correct hardware, the computer scientists have to collaborate with psychologists to determine what particular things would be measured. In particular they must determine what brain activity will be measured and how will this be measured. After determining this, the hardware component will come into the scene in terms of the sensors as this would provide the input to the system to be used. As people have constant brain activities, a lot of storage space would be required on this part and a capable processor.

Further, another concern here would be the connection of the sensor to the computer system. Will the user stay in a special workarea where all the gadgets needed for the augmented cognition will be in place or what networking peripherals will be used? What technology would be used to retrieve and sends back the processed information? Will cables be used or Bluetooth or wifi?

In addition to the hardware demands, the software or the information system to be used needs to undergo numerous testing to ensure that the right algorithm to process the inputs will be used in order to come up with an output that is responsive to the human need.

Augmented cognition may be a step higher in the attempt to use computers in human's decision making process but a lot of things but implementation is not cheap. It entails a lot of studies and usage of new technologies to collect reliable data making its implementation a little expensive.

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