

Date: 7/13/2005

Dr. Christopher Ibeh
Professor,
Plastics Engineering Technology
Pittsburg State University
Pittsburg, KS 66762

Final Report-Artificial Intelligence: Current Issue

Dear Dr. Ibeh,

I am please to submit my final report of the Ethics research paper. The main objective of this research is to bring the current ethical issue on Artificial Intelligence.

I believe this report will meet your standards and surely do explain the current ethical issue artificial intelligence.

Sincerely

Bhanu Bhattarai

Artificial Intelligence : Current Issues

Submitted by

Bhanu Bhattarai

Submitted to

Dr. Christopher C. Ibeh, Professor
DIRECTOR, CNCMM
1701 S. BROADWAY
PITTSBURG, KS 66762

Date: 11/10/2006

Table of Content

Title	Pages
Abstract	4
Problem, Purpose and Solution	4
Related Literature	7
Mode of Inquiry	10
Argument	11
Summary, Conclusion and Recommendations	14
Bibliography	15

ABSTRACT:

Artificial Intelligence (AI) has become a part of human life. It has brought comfort to human being and it is very hard to imagine the world with out AI. There are many advantages of AI. However, there are many controversies about AI too. Philosophers think that AI cannot be developed or in the other word, human can never study their own brain, so they cannot produce anything that can think and acts like a human. This paper will find the appropriate answer to those philosophical questions about the artificial intelligence and will try to demonstrate the positive aspect of the AI.

I. The Problem, Purpose, Solution

For over the last half-century, Artificial Intelligence has become a part of human life. AI has added comfort to human life by performing many routine things without human attention. It has completely changed the world. Engineers point to the fact that AI is an important factor in our technologically advanced world today. However, there are many controversies too about AI. People argue philosophically, that AI can never behave like human beings or in other words, people can never create any machine that will think and act like a human being. Philosophers believe that Artificial Intelligence lacks human intelligence, and lacks emotions. Also, decisions made by these machines would be biased, either intentionally or accidentally. Critics cite the same type of feedback a corporation receives when it tries to use AI to assist it's customers. For example, if a telephone company installs an AI program in it's customer service system to respond to it's customers inquiries for efficient service, customers may, or generally will, complain that they are irritated when talking to a

machine that asks a menu of routine questions or suggests a routine routing of the inquiry. Such clients served by AI programs complain that AI based system cannot deal with some of their special circumstantial problems. Similar types of complaints are aimed at banks and financial institute that also use AI programs, get from their clients. Most of their clients show dissatisfaction on process of checking their credit history by using Artificial Intelligence system. Their main argument is that there might have been valid explanations for a bad credit history, which they can never explain to the intelligent machine. So, is it bad to use Artificial Intelligence in bank service, they believe Artificial Intelligence programs add problems rather than solving them. This paper will investigate possible solutions on how to use artificial intelligence in the corporations for it's maximum benefits without getting any customer complaints, or minimal complains, from it's customer. The paper will suggest some effective methods of using AI to the corporations.

There are many instances when people get so irritated with the answering machine or automated voice mail that they just cancel the service with the company. Many people are complaining about automatic answering machines, an AI program, to respond to customer requests. Critics say that it's very hard and difficult to talk to the machine and sometimes it's very hard to get the proper solution. However, the corporations do not agree with their customers. In response to the customer's dissatisfaction on automated system, Seamus McAteer, a San Francisco-based wireless analyst at research group MMetrics Inc., said that, "...Americans love to complain. Customers are never happy."(Pittsburgh Post-Gazette (Pennsylvania), January 5, 2005) . Actually, he was trying to point out that American

companies have the best customer relation system than anywhere else in the world and still people are complaining. In one hand, customers are dissatisfied and in the other hand, corporations are not willing to accept the problem.

People generally believe that with the use of advanced technology everything will be solved, which is a fallacious concept. If technologies are not used in the proper manner, everything will be topsy-turvy. Historically, people used machinery to get some help in their work and it had assisted according to their thoughts in most of the instances. But, with discovery of the complicated AI machines, people really have to think of how to use those machines. If properly used, these machine will give a positive result, if not, it will generate an adverse effect. So, it is very important to make good plans on how to use them before installing AI- based machines, rather than generating adverse effects. If the technology, like AI, is not used properly then the company will lose money and at the same time their valuable customers.

This paper will investigate the solution on how to use Artificial Intelligence in corporations without losing customers or reputations. The research will be based on published research, published articles and thesis. Actual experiments will not be done either in the field of AI or in the field of psychology or philosophy. This paper will present a logical solution on how to use AI, which can be useful to the corporations that are thinking of using artificial intelligence and can be helpful, to the corporation that have already used artificial intelligence, to modify their system. This paper may also be useful to those who are researching in the field of AI.

For the engineering point of view, there is not any flaw in the AI. It is the most sophisticated machine that a human has ever made. It really can do the assigned task

precisely. NASA had used AI program to repair satellite in space, which worked flawlessly. Metrologies are using AI programs to predict weather, which is working at precise predictions. There is no doubt about the capability of AI for we use it in thousand different ways every day. In some instances people are failing to use AI appropriately, that's why it is receiving criticism. So from the technical point of view, AI is perfectly alright. The only thing needing to be done is to teach people on how to use it. This paper will try to teach corporations on how to use AI in the proper manner. This study promises to save corporation money as well as their customers and their reputations. This paper suggests the solution on how to use AI in the efficient manner without getting any adverse effects.

II. Review of the Related Literature

According to Marvin Minnsky, Professor from Massachusetts Institute of Technology, AI is, "the science of making machines to do things that would require intelligence if done by men" (Applied knowledge, 2005). Professor Eugene Chariniak of Brown University, further elaborated AI meaning. According to Professor Chariniak, AI is, "the study of mental faculties through the use of use of computational models." (Applied knowledge, 2005). According to Patrick H. Winston from Massachusetts Institute of Technology, "the study of ideas that enable computer to be intelligent" (Applied Knowledge, 2005) is the AI. John L. Gordon, Director of Applied Knowledge Research Institute, Blackburn, Lancashire, expanded the concept of AI. According to Gordon, "the aim of artificial intelligence is to create intelligent machines and though this, to understand the principles of intelligence. At the

moment, we can settle for creating less stupid machines.”(Applied Knowledge, 2005).

From the above definition, it can be understood that AI researchers are trying to build a machine or computer that will have a capacity to think and act like a human.

However, some philosophers sharply oppose the whole concept of AI. According to them, human intelligence is highly complex and no one could copy or reproduce that complex human intelligence. For instance, John Searle (1980), a philosophical professor at University of California, Berkeley, had mentioned that the idea of non-biological machine being intelligent is incoherent. According to him, “the computer is not merely a tool in the study of mind; rather, the appropriately programmed computer really is a mind.” John Searle further challenged artificial intelligence by his special experiment called Chinese Room. “Searle points out in his Chinese Room Argument that information processors carry encoded data which describe other things. The encoded data itself is meaningless without a cross reference to the things it describes. This leads Searle to point out that here is no meaning or understanding in an information processor itself” (Artificial Intelligence, 2005).

Similarly, philosophical professor Hubert Dreyfus, also at the University of California, Berkeley, defies the fundamental theory of artificial intelligence. According to him, the human brain cannot be compared to the computer. He further argued that, “we cannot now (and never will) be able to understand our own behavior in the same way as we understand objects in, for example, physics or chemistry; that is by considering ourselves as things whose behavior can be predicted via ‘objective’, context free scientific laws.” (Artificial Intelligence, 2005).

In response to the philosophical questions, Daniel C. Dennett, a novel prize candidate of 1984, has said, "...our brain are millions of times bigger than the brain of gnats, but they are still, for all their vast complexity, compact, efficient, timely organs that somehow or the other manage to perform all their tasks while avoiding combinatorial explosion. A computer a million times bigger or faster than a human brain might not look like the brain of a human being, or even be internally organized like the brain of a human being, but if, for all its difference, it somehow managed to control a wise and timely set of activities, it would have to be the beneficiary of a very special design that avoided combinatorial explosion." (Daniel C. Dennett, 1984).

Similarly, in the response to the argument about the impossibility of understanding complex human brain, Dennett has argued that, "...it is a gripping as commonsense illusion that the earth stands still and the sun goes around the earth. But the only way that those of us who do not believe in the illusion will ever convince the general public that it is an illusion is by gradually unfolding a very difficult and fascinating story about just what is going on in our minds."(Daniel C. Dennett, 1984).

Another novel prize candidate, Herbert A. Simon, has mentioned that philosophers are just afraid that computers will be more intelligent than humans and take over the human's pride and will. Simon mentioned, "...maybe there's a solution to this if it troubles us. Maybe it is not just a solution to this specific problem but a solution in a slightly more general sense. Maybe the trouble is not that we're losing any particular sense of our uniqueness that defines us as human beings, our uniqueness that provides human worth in this world. Maybe the solution is to find

again a way of relating ourselves to the world in which we live- not by finding a new basis for pride, for judging ourselves in some respect superior to the rest of nature; not by setting ourselves apart from nature, but by recognizing at last we are a part of nature, and that we must learn to live at peace with nature.” (Herbert A Simon,1984).

Just like what Simon was trying to say, now it’s time for us, humans, to redefine ourselves in terms of our so-called pride. In the name of human pride and dignity, we should not stop any experiment in science. People had once prayed the moon as a God. If we had stopped our experiment on moon, for that reason, we would not be in this place in science as we are now. Though human pride, dignity and theology has their own meanings and justifications, we should not bring these things in the middle of scientific experiments and hinder the whole process of finding new theories or technologies.

III. MODE OF ENQUIRY

As mentioned above in the problem, AI programs receive many complaints from the customers. The organizations that are using AI programs deny or try to hide the fact, that that there is any problem regarding AI programs. This paper will try to find out the “real” problem through the eyes of the customers and solutions that will be suitable both for the customers and for the organizations.

There are two main school of thoughts, scientific and philosophical, which has played key role in the AI program today. The scientific school of thought says that AI programs are created very carefully and very accurately, so that there is minimal possibility of having any flaws. Where as philosophical school of thoughts says that

since AI is a machine, it lacks intelligence, emotion and that decisions made by it can be biased. The customers hold the same type of argument like philosophers. From the problem they are facing with the AI programs, customers believe that machine cannot solve the problem as perfectly as humans, which is a big delusion. This paper will try to investigate the appropriate solutions of using AI programs in order to remove customers' delusions. In the case of AI, science is ahead of philosophy. According to science, it does not matter whether AI is emotionally correct as long as it makes correct decisions from the given facts.

This paper is limited on previous research, thesis, and published articles in the field of AI. No actual experiments are made either in the field of AI and its scientific capabilities or in the field of philosophy and psychology. All data and facts are gathered from the previously done experiments and published journals, as they are very hard to collect within the limited period time and resource.

IV. ARGUMENT

Artificial intelligence has been in debate for years. People, especially philosophers, are against AI. They believe that the human brain can never be studied and not anything similar to humans can be created. Their argument seems to be inspired from the fear that what AI might do, if it came to the reality. They feared that human pride and dignity might go down if such machine are created. That's the reason they are against AI. They are trying to prove that science cannot make anything like artificial intelligence.

Herbert A. Simon (1984) had mentioned that “..nobody supposes that biology can’t advance until we have a complete understanding of quarks. Nobody even supposes that solid state physics can’t advance until we have a full understanding of quarks. And that, of course, is fortunate. It is fortunate that science can sometimes be hung from skyhooks, because the foundations underground are often mysterious and shifting.”

Simon is basically trying to say that nobody believes science at the beginning but when science proves things, everybody is force to believe. The same things go here in the field of AI. They have proved numbers of things that humans had believed to be impossible. It has advanced so far that with the help of artificial intelligence, MIT is researching on wearable computers, which is far more sophisticated than AI.

“.....the goal of wearable computing is to produce a synergistic combination of human and machine, in which the human performs tasks that it is better at, while the computer performs tasks that it is better at. Over an extended period of time, the wearable computer begins to function as a true extension of the mind and body, and no longer feels as if it is a separate entity. In fact, the user will often adapt to the apparatus to such a degree, that when taking it off, its absence will feel uncomfortable, in the same way that we adapt to shoes and clothing to such a degree that being without them most of us would feel extremely uncomfortable whether in a public setting, or in an environment in which we have come to be accustomed to the protection that shoes and clothing provide. This intimate and constant bonding is such that the combined capabilities of the resulting synergistic whole far exceeds the sum of either. Synergy, in which the human being and computer become elements of

each other's feedback loop, is often called Humanistic Intelligence (HI).”(Steve Mann, Wearable Computing, <http://wearcam.org/icwckeynote.html>).

So, there is no doubt that artificial intelligence is successful. Though AI is moving at a slow pace, it has done considerable amounts of work that human can do, or in some instances, even better.

However, the problem encountered by the customer in using AI comes from lack of planning done by organizations. Whenever the organization plans to use AI, it has to follow certain steps in order to get maximum output from the AI program. The steps are as followed:

- a) make a plan on where to use AI
- b) develop the environment to use AI without interrupting the previous procedure or program.
- c) run the AI in parallel to the old system
- d) check the accuracy and effectiveness AI program
- e) evaluate the efficiency of AI over the previous system
- f) make the necessary adjustment if needed in AI
- g) evaluate AI after the adjustment
- h) if AI prove to be the correct one withdraw the previous system phase wise
- i) at the same time while removing previous system train customer intensively on how to use it
- j) try to bring some promotional activity to encourage customer to use AI
- k) always have backup from the previous system in case of AI failure

These are the basic steps that corporations should follow before AI programs. It's a well-known fact that people dislike change for number of reasons, and if corporations do not train their customers or do not encourage their customers, no matter how efficient AI programs are they will never successful.

V. SUMMARY, CONCLUSION AND RECOMMENDATIONS

From the above findings and arguments, it can be concluded that AI has become a useful tool in human life today. AI has brought comfort to human life. It has done numbers of things in a fraction of second that would take forever for humans to do. So, it has become a useful tool in the modern society today. The only problem it has is in it's implementation phase. It is highly recommended at this stage that corporations should do an efficient planning before using AI programs. As for the capability of AI, there is no doubt that it can work flawlessly. As for the philosophical argument, as mentioned above the main concern is, "will this machine take over human being or will this machine degrade human pride and dignity?" If that's the problem may be we should redefine our human pride and dignity. Science should not be stopped in the name of human pride and dignity. We should not compare ourselves with the machine that we have created by our own hands.

Bibliography

Applied Knowledge Research Institute (2005). Artificial Intelligence, retrieve 25th June, 2005.

www.akri.org/ai/def.html

Dennett, Daniel C (1984). How do we know: Can Machine think. Pages 142-146

Dreyfus, Hubert (1981). Retrieve 25th June,2005. http://en.wikipedia.org/wiki/Hubert_Dreyfus

Maan, Steve. (1998). Wearable Computing as a means for personal Empowerment. Retrive

December 1,2004 from <http://wearcam.org/icwckeynote.html>

Simon, Herbert (1984) How do we know: Some computer models of Human thinking. Page

100-121.

Turning test. Retrieve 25th June, 2005. <http://encyclopedia.laborlawtak.com/turning>