

Technological Singularity & the Ability of Generating Tangible Breakthroughs

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Abstract—Singularity is coming within 20 years! Yes, singularity is coming because we the humans are working on that. Before reaching to agree or disagree on “singularity is coming” or not and would it solve our problems or those problems may get worse; a basic point has to stand out that we are making it. Today’s lifestyle is totally different from the 80s and even the 90s and that is due to the revolution, which has connected the humanity to one place “The Internet”. In the present, I can assure that no one can spend more than a day with out his/her smartphone that is connected to the Internet. And if someone could make it; most likely he/she could not keep up with the global changes with an appropriate pace.

Index Terms— Singularity, revolution, Internet, global change.

1 INTRODUCTION

Singularity is coming within 20 years! Yes, singularity is coming because we the humans are working on that. Before reaching to agree or disagree on “singularity is coming” or not and would it solve our problems or those problems may get worse; a basic point has to stand out that we are making it. Today’s lifestyle is totally different from the 80s and even the 90s and that is due to the revolution which has connected the humanity to one place “The Internet”. In the present, I can assure that no one can spend more than a day with out his/her smartphone which is connected to the internet. And if someone could make it; most likely he/she could not keep up with the global changes with an appropriate pace.

Technology and its application have penetrated to almost 75% of all people living on earth and that in terms of cell phones (Fitzpatrick, 2012). In addition, this fact does show that humans are themselves promoting the use of the technology and contributing to its development intentionally or unintentionally.

However, in the present, technological singularity as a term is getting more common and people are tending to be familiar when they hear it. And for the seek of acknowledging and predicting technological singularities and its role in making tomorrow better; this paper will tackle the modern and current achievements of technological singularity and its new practices in generating tangible breakthroughs to solve challenges that are faced by the humanity. And this generation of tangible breakthroughs is due to the new era of turning technological singularity from its preliminary stages as “science fictions” to influential projects that can be measured and sustained.

2 INTERPRETING SINGULARITY

Singularity as a term has many meanings and different interpretations and each of which does tackle the term from different perspective. But in general, technological singularity is meant to be the futuristic vision of making super intelligent computers which are smarter than humans and can improve itself and inherent that to its successors as a closed loop (singularity.org, 2012). Moreover, it is mainly based on how to emerge such technologies and science with imagination (i.e. science fiction) (Wallach, 2012).

The idea of making computers smarter than humans and can feed itself with progressive logic and analytical skills is mainly derived from the human system of processing information using neurons and synapses. And scientists are trying to emulate this mechanism and utilize it in developing such super autonomous computers. The main concern currently is making those computers self-sufficient. And that by making them programming and reprogramming it and makes improvements and progresses in its logical and analytical abilities and all of that with no interference of humans. (Wallach, 2012).

Another aspect of technological singularity is the aspect that Singularity University is adopting for their complete ideology. It is about making such a singular project using the technological means to solve such problems and challenges facing the humanity in the present and measuring that by the impact that can result in after the implementation of a certain technological project (singularityu.org, 2012). Technological singularity can include many emerging technologies such as robotics, mechanics & electronics, information technology, neuroscience, artificial intelligence and genomics (Wallach, 2012).

Most likely, that the term singularity was in the middle of the 20th century especially by the godfather of singularity the mathematician and science fiction author Vernor Vinge (Dooling, 2008). In 1993, Vinge wrote an article named “The Coming Technological Singularity”, and from that point the idea was getting spread and communicated (Dooling, 2008). In 2005, Ray Kurzweil launched a book titled “The Singularity Is Near” and the campaign of the book made tremendous impact on public, especially, when Kurzweil appeared with Jon Stewart in the Daily Show in 2006.

However, the term technological singularity have attracted most of the people in 2009, and that when the official announcement was due for the establishment of Singularity University by Ray Kurzweil and Peter Diamandis. With a clear mission statement “to assemble, educate and inspire a new generation of leaders who strive to understand and utilize exponentially advancing technologies to address humanity’s grand challenges.” project (singularityu.org, 2012).

The issue of technological singularity became controversial most likely in the late 20th century after it has been finely shaped and stated by its founders and believers. Most of the

debates are with regards to the practicality of the technological singularity and its drawbacks and risks toward humans. And most of the time, it can be observed that science fiction writers, futurists, and certainly the founders of it are strong believers of what technological singularity can help the humanity with. Other logic oriented thinkers may find it hard to accept such visionary and imaginary future with today's challenges. Nevertheless, Singularity University is expected to break the rules and myths and to develop something that can become a role model in generating applicable singularity projects.

3 UNEMPLOYMENT

One of the most classical criticisms toward technological singularity and its applications (e.g. Artificial Intelligence) is that it leads to unemployment. The idea of this point of view is that humans are being paid not based on wages instead they are getting paid according to income and capital. And that leads to another point of intelligence is not the first premise that people are getting paid for. However, this point extends more to how, for example, artificial intelligence can play a role in developing a world of imbalance. Imbalance in the sense of unfairly distributed wealth, where money will accumulate more and more with people who do have the control of intelligent machines, and that is based on a prediction that such machines would be very cheap (Hanson, 2011). On one hand, the most cause of unemployment is the groups of people (who can not get jobs) are not matching the capabilities needed for such jobs and functions. And that can be due to insufficient education, aging, over or under qualification or even due to inadequate level of intelligence. Therefore, technological singularity is aimed at closing the gaps of such unoccupied "functions" not jobs. On the other hand, singularity is coming for making better future for humans and that what scientists are working on nowadays. They are working on a term called "Ethics of Singularity". They are focusing on making singularities ethical and human friendly and that what any product development cycle passes through (singularity.org, 2012). Moreover, this is valid for all research and development work frame, where it is always a duty to optimize any solution with its side effects and that is very vivid with pharmaceutical products like medication and cosmetics.

4 THE REALITY OF SINGULARITY

Another argument is the ability of turning such ideas and imaginations for the future into real projects, products and services that humans can get advantages from. Steven Pinker in 2008 confronted the technological singularity with the point of having no evidence that singularity can achieve what it claims. And he mentioned that all the claimed future inventions such as nuclear powered cars and mile high buildings have never been

happened. However, this point is not applicable on the present time. And that's because of many breakthroughs that break this myth. For example, Burj Khalifa in Dubai's height is more than one mile. Moreover, the breakthroughs in alternative energy in Germany, China, and Japan can speak out for themselves. The conversion of thermal energy into kinetic in Germany, the Solar City in China, and the nuclear power generators in Japan are milestones for applicable breakthroughs in modern life.

6 DEVELOPING SMART LIFE EXPERIENCE

It is meant to reach to technological singularity is to make a new life experience, where human can practice new features that can make his life smarter. For example, as technological singularity defined as developing computers smarter than humans (Wallach, 2012), humans can improve their abilities and skills using those machines (Coreiro, 2010). More over, according to Kurzweil (2005) in his book "The Singularity Is Near", he predicts that due to the exponential growth and development of technology; a human can buy a billion times more powerful computer than human brain just with \$1000 (Coreiro, 2010).

This exponential growth of technology, which meant to be the mathematical multiplication of outcomes, for example, $1+1 = 2$, $2+2 = 4$, $4+4 = 8$ and so on multiplying the outcomes of technological growth reaching by 2045 to a looping feedback computers, which are smarter the human brain and that is according to Kurzweil vision for technological singularity (Wallach, 2012).

However, this exponential growth will raise the bar for humans to prove what they are really are? And how they can keep up with this technological acceleration to their side of benefits? Another example for new life experience for humans is the personality uploading. Personality uploading is defined as installing a "mood" or a charisma to your brain based on your preference or even based on a specific occasion or event, which is already used and experienced by patients of "Parkinson's diseases (Guterman, 2011). And that specific example does break the myth of rationalists who do see technological singularity as "fiction".

8 DISCUSSION

With regards to the present direction of technological singularity toward practicality and measurement of impact; it is positively seen that such singularities can generate tangible breakthroughs for humanity to solve global challenges. However, unleashing people from fear can help the humanity generating such projects that can take people "by their intention" to another era of a better life. And again by their intention, so that they can have the control of what should happen and what should not. For example, taking the super smart computers which would be affordable to almost everyone can take the human out of his weaknesses and struggles. Despite from this "futuristic" vision of tomorrow, what is happening "now" in Singularity University in terms of projects and institutional practices can prove clearly how the application of science, imagination and technology can make tomorrow better.

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