San Juan College High School

Team Members:

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Area of Science: Computer Science

Title: Technological Singularity: Possibility Vs Assumption

I.Project Aim:

The initial proposal for the project is aimed to cite evidences of information of technological breakthroughs of advancement which serve as our pathway to discover possibilities of singularity:

1. To be able to cite variables of technological discovery to formulate substantial predictions.
2. To create a graph to track technological trajectory and to show its acceleration.
3. To be able to create a timeline of a comprehensive research project report.

II.Project Summary and Specifications

Technology pathways which land into consciousness and high expression of humanness to singularity are becoming more inevitable. Discoveries on technological advancement nowadays went so fast and continuously accelerating. The first programmable computer was the Z1, created by Konrad Zuse in 1938. The Z1 could only make simple calculations despite its size. In the 21st century, only seventy-eight years from the creation of the first computer, humans have created a device that is exponentially stronger than the Z1 that still fits in your pocket. People are still developing more advanced forms of technology, one of which is the artificial intelligence.

The development and growth of artificial intelligence will likely transform and uplift the research performed by scientists today, and supersede relevant futuristic predictions. Technology experts such as Ray Kurzweil created graphs focused on the exponential growth of technology. They theorized that the improvement of technology would allow humanity to develop, build, and improve other technology at a faster rate. They had also theorized that if artificial intelligence grows to a certain point, it will then enter a phase of rapid self-improvement, allowing it to develop itself even more.

Technology experts suggested the theory of technological singularity, and disputed by many others. The technological singularity is the event at which the processing capabilities of artificial intelligence and machines surpasses the capacity of man. Many futurists, like Michio Kaku, predict that the technological singularity will happen shortly, and it will change human lives in a major way. Other scientists argue that the technological singularity is unlikely to happen soon, if at all. Our goal is to predict when the singularity is most likely to take place. This prediction, if proven accurate, will help us

determine the direction of technological growth shortly, and it will allow us to prepare for what the coming technological singularity may bring in the future whether it may do harm or good to humanity.

III. Literature Review

As we search more information about technological singularity, we have come across these sources that helped us understand more about the propose technological singularity trajectory. The following studies and documentaries are variables on our research:

The Singularity is Near a book by Ray Kurzweil, published in 2006 discusses a how technology use and power is increasing exponentially from the number of vacuum tubes decreasing to the number of transistors in electronics.

The Game of Life by John Conway made in 1970 talks about how consists of a collection of cells which, based on a few mathematical rules, can live, die or multiply. Depending on the initial conditions, the cells form various patterns throughout the course of the game. Another research on the Road to Singularity: A documentary by futurist and philosopher Jason Silva, explains a metaphoric technological connection as aforementioned that technology is at its peak of acceleration which is happening in real time. How adaptation of technology went so fast in the curve; as aforementioned, that singularity draws near as our technology increases, however, at this point there's no fully discovered equation is determined.

In addition, another documentary leading to greater understanding of Artificial Intelligence (AI) directed by Anne Lukeman in 2015, focusses on developing a machine that can simulate some human skills and can be replaced by technological activities.

IV. Methodology

Our team has created a detailed timeline to discuss how we can verify and validate our variables: model of assumptions, possibilities, trajectories, results of our study, the conclusions we reach and prove by analyzing our results, alongside with the software, references, tables, and other possible variables which we assume and predicted could lead to additional information in making our project relevant to current and most significant achievement on technological breakthroughs.

Furthermore, we as a team, convene to discussed issues (as shown on the graph a.2): how many people are now utilizing internet connectivity from a certain year (2010) and up to the predicted year (2020) as mentioned in Larry Silvas' documentary and the big question on how to reach a certain singularity especially in the field of biotechnology, nanotechnology, and artificial intelligence.

IV. Problem Solution:

A. Current Progress

In our current stance, our team is working on completion of an interim report based on gather information; such as documentaries, and our mentors. We investigate possible variables that would show technological singularity.

Pathways to connect to consciousness and high expression of humanness to singularity is to show graphs of modern discoveries of human intelligence a where artificial intelligence transform and uplift the research that supersedes relevant and futuristic predictions. Among experts such as Ray Kurzweil made graph had predicted the technological singularity will occur at 2045 whereas on the other study of John's Cornwell game of life simulation which show how "cellular automation" interact with each other and how they populate. The purpose of nanotechnology is to manipulate the physical world and biotechnology use by improving human lifestyle- human genome.

As a group, we decided to create a project timeline to show work updates of our research. Also, a graph of exponential growth of AI from the creation (1950) to future and the human intelligence as propose by   Conway's Game of Simulations will be provided, to show how such interaction and the growth of knowledge populate.

Note: a.1 Graph Conway's Game of Simulation- still in progress

a.2 Graph on people connectivity according to Peter Diamandis (CEO, XPRIZE FOUNDATION),

part of the documentary of Larry Silva-The Road to Singularity.
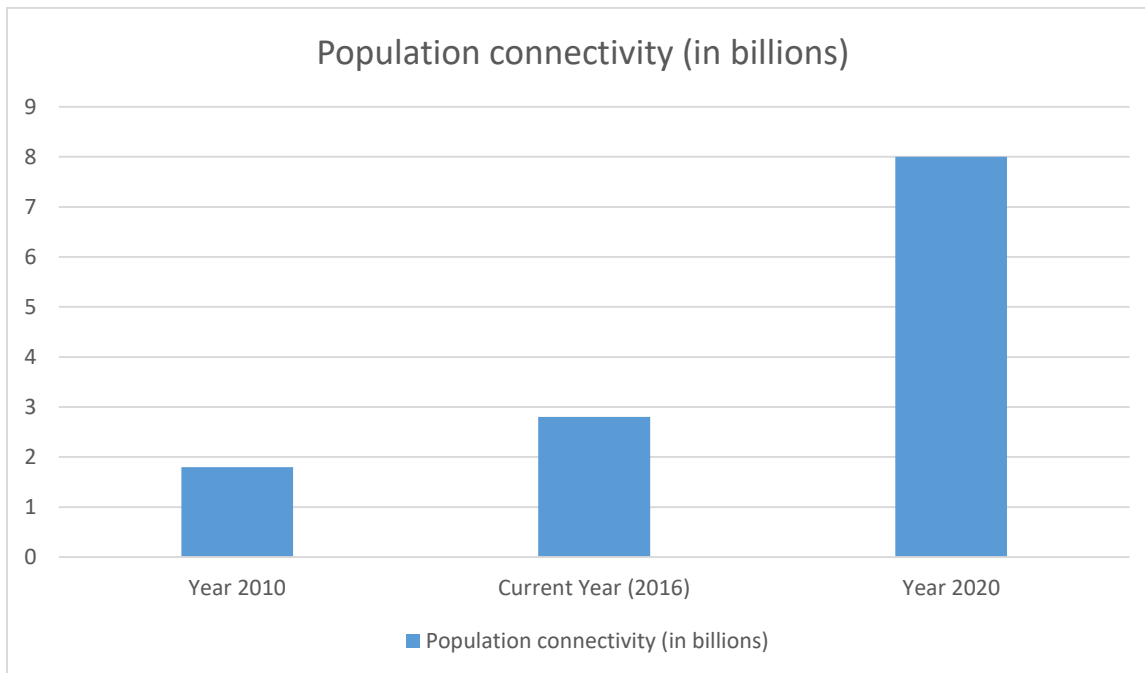
a.3 Project timeline – see table

B. Obstacles to Progress

    Challenges that we encounter as a team which obstructs us toward the progress of the research were time management and availability of the resources. At first, most of the time we just plan and research with limited time to meet and consolidate our own findings, to be able to put the research element specifics in timely fashion.   Lack of resources is another challenge, knowing that the topic has a wider range of progression, but there were few noted references such as documentaries have been published, where we draw out some variables and information relevant to our research.

VI. Project Timeline

Months	Project goal	Activity	Expected Completion	Person Responsible
1 month October	Create a Project Title and proposal	Team Brainstorming: _ draft a Project Proposal	Publish and Submit the final proposal on the deadline	Team: John , Johndenmyr, Fillip
1 month November	Lay out project aims and objectives and research related studies on technological discoveries.	Meet and collaborate as a team. Collect information from proponents of technological breakthroughs	Create goals and specific objectives. Watch related videos on TV, research studies: Singularity is Near	Team: John , Johndenmyr, Fillip
1 month December	Develop an Interim Report	Complete details/ elements of interim report	Submit the report on the deadline, revisions can be made alongside.	Team: John , Johndenmyr, Fillip With a mentor
1 month January	Enhance understanding of the extent of technological trajectory advancement	Prepare and examine related research that will track the technological acceleration then and now	Retain subjects for the longitudinal study. Gather artifacts: variable Predictors such as graphs and relevant data.	Team: John , Johndenmyr, Fillip With a mentor
2 months February -March	Project Evaluation Presentation	Team meets to write the final paper of the project in	Enhance and examine the paper for evaluation.	Team: John , Johndenmyr, Fillip With our adviser-mentor

		preparation of the project interview		and supercomputing challenge area evaluator
1 month April	Final Written Report	Finalize comprehensive written project report	Submission of the final written report	Team: John , Johndenmyr, Fillip With the adviser-mentor and supercomputing challenge area evaluator

VIII. References

Websites:

http://electronics.howstuffworks.com/gadgets/high-tech-gadgets/technological-singularity.htm

https://www-rohan.sdsu.edu/faculty/vinge/misc/singularity.html

http://bigthink.com/dr-kakus-universe/the-technological-singularity-and-merging-with-machines

http://thenextweb.com/insider/2011/06/19/what-is-the-technological-singularity/

Documentaries:

The Road to the Singularity. Jason Silva. Amazon.com 2016 Film

Artificial Singularity. Anne Lukeman. Amazon.com 2015 Film