

A CRITQUE OF ARTIFICIAL INTELIGENCE IN ALAN TURING'S PHILOSOPHY

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CERTIFICATION

This is to certify that this project "**A CRITIQUE OF ARTIFICIAL INTELLIGENCE IN ALAN TURING'S PHILOSOPHY** " was carried out by **OSATO MERCY WILLIAMS** with **MATRICULATION NUMBER** **ART1802005** of the Department of Philosophy, University of Benin, Benin City and that it is sufficient in both scope and content in partial fulfillment of the requirement for the award of Bachelor of Art (B.A) Degree in Philosophy.

Project Supervisor

Date

Date
(Head of Department)

DEDICATION

This project is dedicated to God Almighty whose grace saw me through the course of study and also to my Mum Elizabeth Onuoha and Most Importantly My Mum Mrs Doris Williams Who now rests In the Bosom of the lord.

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Philosophy Students (Department of Philosophy

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ABSTRACT

One of the major problems of man and artificial intelligence, is human's gullibility towards artificial intelligence. This can lead to misinformation, manipulation and exploitation because humans blindly trust artificial intelligence outputs without critically evaluating them. This research gives an in depth analysis of philosophy, man and artificial intelligence. It criticizes, evaluates and questions artificial intelligence. It posits to solve man's gullibility in terms of technology. It is to serve as an eye opener to make man take cautious steps in the business of artificial intelligence, technological inventions and its usage. It romances across the philosophy of mind, with the question; Does artificial intelligence have a mind or consciousness? Will our over dependence on artificial intelligence lead us to existential crisis? The weaponization of artificial intelligence which could be detrimental to the human race just like nuclear bombs and unemployment. The religious implications, metaphysical implications, ethical implications and how long before artificial intelligence adapts fully and begins to revolt against the human race? In the light of this, we shall also critically analyze Alan Turing's theory on artificial intelligence that holds that "artificial intelligence should be defined in the terms of acting and not thinking" explaining also the Turing test, its achievements and limitations. In this case, we will be using analytic and critical methods. We shall break into smaller bits the concepts of artificial intelligence so we can understand the meaning and use of artificial intelligence and using critical methods to analyze and criticize artificial intelligence, these methods will be used to give in depth understanding of the work. From the findings of this study, we discovered that the Influence of artificial intelligence has existential effects ranging from the physical to the psychological influences which have negative and positive effects on humans

CHAPTER ONE

1.1 BACKGROUND OF STUDY

Artificial intelligence has undoubtedly changed the course of human history. Providing us with a vast array of benefits and sweet ways that have enhanced our quality of life. Philosophers have been fascinated with the concept of Artificial intelligence since its inception. Exploring the moral and ethical implications that arise from its integration into our society. Artificial intelligence came into the limelight in the 20th century it was pioneered by John McCarthy.

At the forefront of this discussion are the likes of Kant, Aristotle, and Nietzsche whose theories can be used to analyze Artificial intelligence, none of them had a direct theory of Artificial intelligence but their theories can be linked. Kant for instance, believed that the advancement of technology such as Artificial intelligence is essential to human progress enabling us to reach new levels of knowledge and understanding. Nietzsche takes a different approach, suggesting that Artificial intelligence is a reflection of human desires for power and control and that the development of Artificial intelligence is a natural progression of human evolution. From this philosophical perspective, the fast pace at which Artificial intelligence is advancing has significant implications for our society and raises important ethical questions. For instance, the potential for Artificial intelligence to surpass human intelligence which could lead to a shift in power dynamics and an existential crisis for humanity. The integration of Artificial intelligence into our society and economy will also require careful consideration of how to balance the benefits of increased efficiency and accuracy with the potential loss of jobs and the impact on human values. Due to the over-reliance of man on artificial intelligence and its effects,

philosophers have been forced to open a philosophical discourse on Artificial intelligence its advancements, and how reliable it is.

Alan Turing also known as the father of modern computer science is said to be the first man to cast the blow concerning Artificial intelligence with the question; “Can machines think?” In his paper - computing machinery and Intelligence 1950, he argued that if a machine could carry on a conversation with a human in such a way that could not be distinguished from a machine to a human, then the machine could be said to be capable of thinking.

J. Copeland explains saying:

“From the point of view of Turing scholarship, the most important parts of 'Can Automatic Calculating Machines Be Said to Think' are the passages containing Turing's exposition of the imitation game or Turing test. The description of the test that Turing gave in 'Computing Machinery and Intelligence' is here modified in a number of significant ways”.¹

This test was just a practical way of evaluating if a machine has intelligence behavior or just merely acts.

“ a computer would deserve to be called intelligent if it could deceive a humanity living that it was human”².

Searle into the inquisition of Artificial intelligence proposed under his theory of the Chinese room argument saying:

“machines can stimulate understanding without actually understanding anything.”³

The quote above shows how he argued extensively that machines could be programmed to produce outputs that resembled human understanding but this does not mean they are conscious or capable of understanding. This discourse, concerning the philosophy of Artificial intelligence, proposes a debate/critical evaluation of Artificial intelligence. This discussion dates from the

20th century to this era. As technology advances and becomes more pervasive in our lives, issues related to its ethics, safety, and impact on society have become increasingly important. Further, fueling discussions and debates in the field of Artificial intelligence philosophy.

1.2 STATEMENT OF PROBLEM

Philosophy as we know it, seeks to inquire, analyze and critically evaluate the universe and its components. With this, we have figured out that the highly-head artificial intelligence has several flaws that need to be critically analyzed as it could be detrimental to the human race.

One of the major problems of man and artificial intelligence is humans' gullibility towards it. This could lead to misinformation, manipulation, and exploitation because humans blindly trust Artificial intelligence output without critically evaluating it. Another problem is the problem of human replacement As Artificial intelligence systems become more advanced and capable there is a concern that they may eventually surpass humans' intelligence and make jobs obsolete. Also, research holds that since Artificial intelligence in robotics can act like man, it can replace the role of humans as emotional figures to their humans.

Futhermore, this leads to ethical concerns that question of privacy and violation, warfare mechanisms, and political mechanisms, for example, the endless possibilities of Artificial intelligence, make it easy the violation of people's privacy for example password cracking, Artificial intelligence can be used to guess and crack people's password. Also as a political mechanism, Artificial intelligence can be used to distribute false information and create false news as it can also be used as surveillance hence leading to loss of privacy.

It is important to note that if Artificial intelligence systems become more intelligent than their human creatures, they could potentially become impossible to control or contain this could lead

to the emergence of an Artificial intelligence takeover in which machines take over the control of human society and pose a significant Threat.

Nick Boston quotes:

“ the prospect of a superintelligence could be the most important and the most daunting Change humanity has ever faced. We need to be very careful about what we wish for. If we get it wrong, the repercussions could be very serious indeed”³.

In all, The weaponization of Artificial intelligence, Job loss to Artificial intelligence and the problem of consciousness are many of the problems of the philosophy of Artificial intelligence.

1.3 PURPOSE OF STUDY

This research purpose of the study is to carefully examine the importance and consequences for human society. It evaluates the ethical, social, and political implications of Artificial intelligence and considers how it could affect various aspects of our lives personal privacy, and human rights. Philosophers seek to understand the nature of Artificial intelligence, its limitations, and its potential risks and benefits and to develop ethical and moral frameworks for guiding its development, deployment, and usage. Criticizing Artificial intelligence helps to ensure that it is developed ethically and its benefits are maximized while its negative impacts are minimized. In all it is to ensure that it is developed and used in a way it serves the best interests of humanity as a whole.

1.4 SIGNIFICANCE OF STUDY

The importance of this study is that it will showcase the turbine's perspective in analyzing and determining the nature of Artificial intelligence and also give reasons why it is crucial to

evaluate the capabilities and limitations of machines to understand their potential impact on society. Using the famous Turing test, we shall evaluate machine intelligence. I believe that through rigorous analysis and critique. The concept of artificial intelligence has contemporary relevance to our humanity as It gives us an opening to understand Artificial intelligence creates advancements in Artificial intelligence, regulates policy decisions, and evaluates the ethical implications of Artificial intelligence to ensure that it is developed and used responsibly. The findings from this research will serve as a resource material for philosophers and scientists and a blueprint when dealing with the problems of Artificial intelligence. This research gives an in-depth analysis of the nature, essence, and scope of Artificial intelligence.

1.5 SCOPE OF STUDY

The scope of the study for this research extends from the use of applied ethics to evaluate theoretical and practical criticism in the aspect of computing and artificial intelligence. This research introduces topics like machine learning, limitations of machines, computer vision, and robotics.

1.6 METHODOLOGY

In the course of this work, we will be using analytic and critical methods. We shall break into smaller bits the concepts of artificial intelligence, so we can understand the meaning and. Use of artificial intelligence. These methods will be used to give an in-depth understanding of the work. in chapter one, we gave an in-depth overview of what the research is all about. From statement of proplem, purpose of study, significance and literature review. Chapter Two, we analyzed, defined Artificial intelligence, its history, types, merits and demerits and also the Life and times of Alan Turing . Chapter 3 holds the analysis of Alan Turing theory of Artificial Intelligence and

machines How he devised the famous quote "Can Machines Think"? His methods and predictions. The merits , demerits and limitations of his theory. Finally, Chapter 4 holds the critical evaluation of artificial intelligence, recommendations to the problems of artificial intelligence and conclusion of the work.

1.7 LITERATURE REVIEW

Artificial Intelligence, machines, robotics, and computers have been an important part of our life and most times in this 21st century, we can't live without them. Artificial intelligence powers most of our technologies ranging from our phones, bank apps, satellites, social media, etc. And obviously, for one to be able to get and pass the information we have to be determined to deal with it.

The first book to be reviewed is Technology vs Humanity by Gerd Leonhead. Technology vs Humanity is a thought-provoking book that delves into the impact of exponential technological progress on our society and humanity. Leonhead. posits that while technological progress has brought about tremendous benefits it is also threatening our very existence as humans. The book raises several critical questions about technological progress and criticizes technology/ Artificial intelligence. The book is divided into four parts each exploring the different aspects of the technology vs human dilemma. The first chapter talked about the growth of technology and its potential implications for humans and society. The exponential growth of Artificial intelligence, robotics, biotechnology, etc. And how it changes the nature of humans

The second part of the book, explains the impact of technology on our economy, job losses, social unrest, and concentration of wealth and power in the hands of the few tech giants which could lead to disastrous consequences.

Leo's head quotes

“Apart from being able to stimulate human interactions increasingly well, technology does not know nor does it care for happiness, self-realization, fulfillment, emotions, values, and beliefs. It only understands rational action completion, logic, efficiency and yes or no answer .”⁴

He says further, technology is entirely nihilistic about the things we humans care about. The third part of the book focuses on the impact of technology on our society including the rise of surveillance, loss of privacy, erosion of our democratic values, etc. Technology for Leonhead is that it is rapidly transforming the nature of our social structure leading to newfound power and control. He raised concerns about the potentiality of technology to be used as a tool of oppression and control. Eg china's social credit system and the rise of facial recognition technology. The final part of the book explores the impact of technology on our planet including that of climate change and the potential for technology to create environmental problems. Leonhead posits that technology is a double-edged sword that can both help and harm the planet. Overall, the book Technology vs Humanity is a compelling and thought-provoking book that raised important questions about the impact of technology and our society, and humanity calls for a better approach that puts humanity at the center, not technology.

Also, Hubert Dreyfus in his book, What computers can do.was also useful in this course of theoretical investigation.

In this book, Dreyfus argued that computers would never be able to replicate humans intelligence because they lacked the kind of context-sensitive understanding that humans possess. He posits that computers are limited to following rules and do not understand the meaning of the information they possess Dreyfus's criticism of Artificial intelligence is deeply rooted in his beliefs that human intelligence is deeply connected to our bodily experiences in the world. He

argued that machines can't replace the kind of embodied intelligence because they cannot interact with the world in the same way humans do. Dreyfus talked about the four primary assumptions of Artificial intelligence research which he called: biological, psychological, epistemological, and ontological assumptions . The biological assumption is that the brain is analogous to computer software. The psychological assumption is that the mind works by performing discrete computations or representations or symbols.

The epistemological assumption holds that all activity can be formalized in the form of predicate rules or laws. The ontological assumption is that reality consists entirely of a set of mutually dependent atomic facts.

Most importantly, Alan Turing In his 1950 paper “computing machinery and Intelligence” is one of the most influential works in the history of artificial intelligence. The paper proposes the Turing test which is a measure of a machine's ability to exhibit intelligent behavior that is indistinguishable from that of a human. In the paper, Turing argues that machines do not think but act. Turing proposes a test in which a human judge interacts with a machine and the human via a text-based interface. If the judge can't reliably distinguish between the machine and the human in their responses, then machine is said to have passed the test.

Futhermore,John Searle in his book “minds brain and Programmes”explores the significance of AI in humanity. He quotes:

“The problem of artificial intelligence is that it lacks intentionality it can only simulate which intelligence, but it doesn't understand anything.”⁵

Searle criticized the idea that computer programs could be said to understand or have consciousness. In the same way that humans do. Searle argues that there is a way or a fundamental difference between the way a mind operates and the way a computer is programmed.

The computer can manipulate symbols according to rules it does not true for me to understand the meaning of these symbols. In a way that human being does. Searle uses the example of the Chinese room thought experiment to illustrate his point:

Imagine a person, who knows no Chinese sitting in a room with a large set of rule books that allows him to respond with Chinese characters from the outside, the person in the room might understand Chinese since he can respond to questions in a way it is grammatically correct and seems to make sense however, Searle argues that the person in the room does not really know Chinese but just following a set of rules. The Mind, Brain, and Programs is an important paper in the field of philosophy of mind and have a significant impact on the debate around Artificial intelligence and consciousness.

In Addition, Jack Copeland in his book “Artificial intelligence : a philosophical introduction”. Was also useful in this course of theoretical investigation. Copeland gave a comprehensive introduction to the philosophy of Artificial intelligence; it covers both the philosophical aspect and a wide range of topics including the nature of intelligence, the relationship between mind and machine, and the ethical implications of Artificial intelligence.

Copeland quotes:

“The development of Artificial intelligence has the potential to bring about significant social economic changes and we must consider the ethical implications of these changes”⁶

This book covers the early pioneers of Artificial intelligence like Alan Turing and John Con Newman. Copeland then goes on to explore various approaches to Artificial intelligence including symbolic Artificial intelligence connectionist and embodied Artificial intelligence. He also discusses the concept of strong Artificial intelligence which posits that machines can be conscious and have subjective experience. One key theme of the book is the relationship between

Artificial intelligence and the human mind. Copeland argues that Artificial intelligence can help us better understand the nature of human cognition and consciousness and also warned of the dangers.

Also, Stuart Russell and Peter Norvig “Artificial intelligence: a modern approach”. Is an excellent book with a comprehensive introduction to the fields of Artificial intelligence. The book covers a wide range of topics in Artificial intelligence including intelligent agents, problem-solving, etc the strength of the book is focused on the algorithms and techniques in Artificial intelligence. This book provides a solid foundation for the philosophy of Artificial intelligence.

In Addition, “The Philosophy of Artificial intelligence “by Margaret Boden is a thought provoking book. This book is a collection of essays and articles by leading philosophers. The book explores the philosophical issues surrounding artificial intelligence. The book is organized into four parts which are: the nature of Artificial intelligence, Artificial intelligence and the mind, Artificial intelligence and epistemology, and Artificial intelligence and ethics. The key theme of the book is centered on the relationship between Artificial intelligence and human intelligence.

Boden writes:

“ Artificial intelligence raises profound questions about what it means to be human, what it means to be human, what it means to think, and what it means to be intelligent “⁷

Moreso, Jr Lucas: “minds, machine, and Gödel An Appraisal of mechanism” is a book that examines the limitations of artificial intelligence and the nature of human thought. Lucas argues that machines cannot be true Loy intelligent because they cannot reason and understand the limits of our knowledge.

“ A machine cannot know that it is a machine it is not capable of having an overview of its position in the universe.”¹⁰

He posits that human intelligence is different from machine intelligence

Also, Jerry Kaplan, in his book: “Artificial Intelligence, what everyone needs to Know.” This book is a comprehensive guide to the field of Artificial intelligence. The book covers a wide range of topics from the history of Artificial intelligence to the current development in the field.

Kaplan quotes

“ Just because a machine can do something that was previously thought it does not require human intelligence does not mean it is doing it the way humans do”.⁸

However, Ray kurzweil In his book “The age of spiritual machines; when machines exceed artificial intelligence” explored and discussed the implications of artificial intelligence and its impact on the future of humanity. Kurzweil argues that Artificial intelligence will surpass human intelligence shortly leading to the technological singularity that will fundamentally transform society.

He quotes

“ within several decades, information-based technologies will encompass human knowledge and proficiency ultimately including the power recognition powers, problem-solving, emotional and moral intelligence of the human brain itself”⁹.

This book provides a complete vision of the future of Artificial intelligence and also its implications.

Also, Muller Vincent “Artificial intelligence and the future of humanity; 10 ethical questions” Is a thought-provoking exploration of the moral implications of Artificial intelligence. The book is a collection of essays to examine various ethical-related issues to aid the development and deployment of Artificial intelligence.

“ Artificial intelligence systems are vulnerable to bias because they learn from human data and decision-making”¹⁰.

The book proposes that ethical considerations must be integrated into Artificial intelligence development.

Moreso, Russell Stuart in his book “human compatible, artificial intelligence and Problem control2019” explores the problem of control in artificial intelligence and its implications for humanity. He argues that the current approach to Artificial intelligence development which prioritizes efficiency and performance over the safety of human values is fundamentally flawed. The problem according to stuart is that machines will become more like humans but that humans will become more like machines

Russel proposes a new approach to Artificial intelligence development and emphasizes human control and value alignment.

Finally,Nick Bristol, talked about the existential risks of Artificial intelligence in his work “Superintelligence: paths dangers ad Strategies 2014”. He argues that the creation of super-intelligent machines poses an existential risk to humanity and that we need to take precautions to ensure the outcome is positive.

He quotes

“The control problem is the Problem of how to ensure that a super-intelligent agent pursues only goals that are aligned with human welfare”¹¹

Boston highlights the need for careful consideration of implications and development strategies tore they are created safely and beneficially.

With the above, this work on Artificial intelligence already steems various questions in us like; What ethical considerations should be taken into account when developing and deploying

Artificial intelligence systems that interact with humans? Or like the question Brian Smith will ask:

“What ethical considerations should be taken into account when developing and deploying Artificial intelligence systems that interact with humans?”¹²

1.8 DEFINITION OF TERMS

- **ARTIFICIAL INTELLIGENCE:** The theory and development of computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages.
- **MACHINES:** An apparatus using mechanical power and having several parts, each with a definite function and together performing a particular task.
- **THINKING:** The process of considering or reasoning about something.
- **CRITIQUE:** A detailed analysis and assessment of something

With the above definitions, we will get a vivid understanding of the difference between artificial intelligence and Machines so as to grasp the essence of this research.

However,

“The field of AI comprises many fascinating areas but problem solving is fundamental to many of the AI-based applications.”¹³

With this, we will go on to analyze Artificial Intelligence, Its history, types and the life and times of Alan Turing.

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CHAPTER TWO

2.1 LIFE AND TIMES OF ALAN TURING

Alan Turing, renowned for his contributions to computer science, mathematics, and code-breaking during World War II, was not only a brilliant scientist but also an influential philosopher. His ideas and theories have had a profound impact on the field of artificial intelligence and continue to shape our understanding of computing and cognition.

According to Copeland in his book “The Essential Turing: Seminal Writings in Computing, Logic, Philosophy, Artificial Intelligence, and Artificial Life: Plus The Secrets of Enigma” he quotes:

“Alan Mathison Turing was born on 23 June 1912 and died on 7 June 1954 at his home in Wilmslow, Cheshire. Turing contributed to logic, mathematics, biology, philosophy, cryptanalysis, and formatively to the areas later known as computer science, cognitive science, Artificial Intelligence, and Artificial Life.”¹.

From a young age, Turing displayed exceptional aptitude in mathematics and logic. He attended the University of Cambridge, where he studied mathematics and later delved into the foundations of mathematical logic. Turing's groundbreaking work on computability and the concept of a universal machine laid the foundation for the field of computer science. One of Turing's significant achievements was the formulation of the Turing machine, a theoretical device that can simulate any algorithmic computation. This concept revolutionized the understanding of computation, providing a theoretical framework for the design and analysis of algorithms. Turing's concept of the Turing machine became a cornerstone in the development of modern computers. During World War II, Turing played a pivotal role in breaking the German Enigma code, which encrypted messages used by the Axis powers. He worked at the Government Code

and Cypher School in Bletchley Park, where his knowledge of mathematics and cryptography proved invaluable. Turing's work on the design and operation of the bomb machine enabled the decryption of crucial military communications, significantly aiding the Allied war effort. Beyond his scientific contributions, Turing made significant philosophical contributions, particularly in the realm of artificial intelligence. In his influential paper "Computing Machinery and Intelligence," published in 1950, Turing proposed the concept of the Turing Test. This test aimed to determine whether a machine could exhibit intelligent behavior indistinguishable from that of a human. Turing's exploration of machine intelligence, cognition, and consciousness sparked ongoing debates and investigations into the nature of intelligence and the possibility of creating machines that can think. Turing's philosophical ideas on machine intelligence continue to inspire researchers and thinkers in the field of artificial intelligence. His notion that machines can simulate human intelligence and exhibit intelligent behavior challenged traditional notions of what it means to be intelligent or conscious. Turing's work laid the groundwork for the development of artificial intelligence systems and the exploration of cognitive processes within machines.

Despite his profound contributions to science and philosophy, Turing faced significant challenges in his personal life.¹ In 1952, he was convicted of "gross indecency" due to his homosexual relationship, which was considered illegal at the time. Turing was subjected to chemical castration as an alternative to imprisonment, and he tragically died by suicide in 1954. Alan Turing's legacy as a philosopher, mathematician, and computer scientist is immeasurable. His pioneering ideas on computation, artificial intelligence, and machine consciousness continue to shape our understanding of these fields. Turing's enduring impact serves as a testament to his brilliance and the transformative power of his contributions.

2.2 WHAT IS ARTIFICIAL INTELLIGENCE

Artificial Intelligence refers to the simulation of human intelligence in machines that are programmed to perform tasks that typically require human intelligence. It is a broad field of study and research that encompasses various subfields, including machine learning, natural language processing, computer vision, robotics, and more.

John McCarthy, coined the term "Artificial Intelligence" in 1956 as:

"The science and engineering of making intelligent machines, especially intelligent computer programs."²

Artificial intelligence systems are designed to analyze and interpret vast amounts of data, make decisions, and perform tasks with a level of autonomy and adaptability. These systems aim to replicate or mimic human cognitive abilities such as learning, reasoning, problem-solving, perception, and language understanding.

2.3 TYPES OF ARTIFICIAL INTELLIGENCE

There are two primary types of Artificial intelligence: narrow or weak Artificial intelligence and general or strong Artificial intelligence. Narrow Artificial intelligence refers to systems that are designed to perform specific tasks and are limited to those tasks. Examples include voice assistants, image recognition systems, and recommendation algorithms. General Artificial intelligence, on the other hand, refers to systems that possess the ability to understand, learn, and apply knowledge across a wide range of tasks, similar to human intelligence. General Artificial intelligence is still largely theoretical and not yet achieved. Artificial intelligence has numerous applications across various industries, including healthcare, finance, transportation,

manufacturing, and entertainment. It can be used for tasks such as data analysis, pattern recognition, predictive modeling, autonomous vehicles, virtual assistants, and more. Stuart Russell and Peter Norvig notes that :

"Artificial Intelligence is the study of agents that receive percepts from the environment and perform actions."³

This explains how fast the general and narrow Artificial intelligence operates.

2.4 HISTORY OF ARTIFICIAL INTELLIGENCE

The History of Artificial intelligence as according to myths;

“In Greek mythology, Talos was a giant constructed of bronze who acted as guardian for the island of Crete. He would throw boulders at the ships of invaders and would complete 3 circuits around the island's perimeter daily. According to pseudo-Apollodorus' Bibliothekē, Hephaestus forged Talos with the aid of a cyclops and presented the automaton as a gift to Minos”.⁴

Hence the idea of artificial intelligence and machines keyed into the minds of men as a myth brought into reality. Artificial Intelligence has its roots or some elements Embedded In the works / influence of Philosophers like Aristotle and Archytas of Tarentum who laid the foundation for logical thinking and early attempts at creating artificial beings. Archytas of Tarentum, an ancient Greek mathematician and philosopher who lived in the 4th century BCE, was known for his contributions to mathematics and mechanical engineering. He built several machines, including the mechanical bird called the "Pigeon," which could flap its wings and fly for a short distance. While this can be seen as an early example of automata or mechanical devices.

2.4.1 EARLY MECHANICAL COMPUTING(17th CENTURY) Blaise Pascal and Gottfried

Leibniz: Blaise Pascal, a French mathematician, physicist, and philosopher, invented the Pascaline in the 17th century. The Pascaline was a mechanical calculator designed to perform basic arithmetic operations like addition and subtraction. It used a series of gears and wheels to manipulate numbers.

Gottfried Leibniz, a German mathematician and philosopher, independently developed a mechanical calculator known as the Leibniz Wheel in the late 17th century. The Leibniz Wheel was an improved version of the Pascaline and was capable of performing addition, subtraction, multiplication, and division.

2.4.2 EARLY MECHANICAL COMPUTING(19th CENTURY)

Charles Babbage and the Analytical Engine: In the 19th century, the English mathematician and inventor Charles Babbage conceived designs for a mechanical general-purpose computer called the “Analytical Engine” .The “Analytical Engine” was envisioned as a vast improvement over earlier calculators, with the capability to perform complex calculations and store data in a memory system. Babbage's design incorporated key computing concepts such as a stored program, punched cards for input and output, and an arithmetic logic unit (ALU). Although the Analytical Engine was never fully realized due to funding issues and technological limitations of the time, it is regarded as a precursor to modern digital computers.

These mechanical computing devices and concepts from Pascal, Leibniz, and Babbage played a crucial role in demonstrating the feasibility and potential of automating mathematical computations. They laid the foundation for subsequent developments in computing machinery and the eventual emergence of modern computers in the 20th century. These mechanical

calculators, including the Pascaline and the Leibniz Wheel, were significant precursors to modern computers. They demonstrated the feasibility of automating mathematical calculations through mechanical means.

2.4.3 THE BIRTH OF ARTIFICIAL INTELLIGENCE (1952–1956)

The birth of Artificial intelligence in the 1950's came out as an offshoot with theoretical foundations. In the 1940s and 50s, a group of scientists from various disciplines, including mathematics, psychology, engineering, economics, and political science, began discussing the possibility of creating an artificial brain. This exploration led to the establishment of the field of artificial intelligence (Artificial intelligence) as an academic discipline in 1956. During this time, there were several key developments that influenced the thinking around creating intelligent machines. Research in neurology revealed that the brain operated through electrical networks of neurons that fired in all-or-nothing pulses. The convergence of these ideas suggested the potential for constructing an electronic brain, leading to early research into thinking machines.

These early developments in cybernetics, neural networks, and the exploration of electronic brain analogies laid the foundation for subsequent advancements in Artificial intelligence research. They set the stage for the growth of the field and the contributions of researchers like Marvin Minsky, who became influential leaders and innovators in Artificial intelligence over the next five decades. Examples of this work included robots like W. Grey Walter's turtles and the Johns Hopkins Beast.

2.4.4 THE TURING TEST

In 1950, Alan Turing made a significant contribution to the field of artificial intelligence (Artificial intelligence) with the publication of his influential paper. In this paper, Turing pondered the possibility of creating thinking machines. Recognizing the challenge in defining what it means to "think," he introduced the concept of the Turing Test. Turing proposed that if a machine could engage in a conversation through a teleprinter in a manner indistinguishable from a conversation with a human being, then it could be considered "thinking." This simplified version of the problem allowed Turing to make a compelling argument for the plausibility of a "thinking machine." His paper addressed common objections to the idea and laid out a framework for exploring machine intelligence. The Turing Test holds significant importance as it was the first significant proposal in the philosophy of artificial intelligence. It sparked discussions about the nature of intelligence and became a benchmark for evaluating machine intelligence. Turing's work and the Turing Test have since influenced the development of Artificial intelligence and continue to be foundational in the field.

2.4.5 Winter Era(Artificial intelligence dark Age) / MODERN Artificial intelligence

During the 1970s, the field of artificial intelligence (Artificial intelligence) faced significant challenges and encountered setbacks. Modern Artificial intelligence refers to the current state of artificial intelligence, which encompasses various advanced techniques and technologies that have emerged in recent years.

Here are some key aspects of modern Artificial intelligence:

1. Machine Learning and Deep Learning: Machine learning is a subfield of Artificial intelligence that focuses on developing algorithms and models that enable computers to learn from data and make predictions or decisions without explicit programming. Deep learning, a subset of machine

learning, utilizes artificial neural networks with multiple layers to process and analyze complex patterns and structures in data. These techniques have revolutionized areas such as image recognition, natural language processing, and speech recognition.

2. Neural Networks and Deep Neural Networks: Deep neural networks, also known as deep learning models, consist of many layers of neurons, allowing them to learn hierarchical representations of data and solve complex problems

3. Natural Language Processing (NLP): NLP focuses on enabling computers to understand, interpret, and generate human language.

4.Reinforcement Learning: Reinforcement learning is a branch of machine learning where an agent learns to make optimal decisions by interacting with an environment. Through trial and error, the agent receives feedback in the form of rewards or penalties, allowing it to learn and improve its decision-making capabilities over time.eg Artificial intelligence games like whot and sudoku.

3. MERITS OF ARTIFICIAL INTELLIGENCE

Duggal in her article; what is artificial intelligence;types, history abd features expresses that:

“Experts regard artificial intelligence as a factor of production, which has the potential to introduce new sources of growth and change the way work is done across industries. For instance, this PWC article predicts that Artificial intelligence could potentially contribute \$15.7 trillion to the global economy by 2035. China and the United States are primed to benefit the most from the coming Artificial intelligence boom, accounting for nearly 70% of the global impact.”⁵

Hence, Artificial Intelligence (Artificial intelligence) has emerged as a transformative technology, revolutionizing industries and reshaping the way we live, work, and interact. With its remarkable capabilities, Artificial intelligence holds immense potential to enhance efficiency, improve decision-making processes, and unlock new opportunities across various domains. Here are some few listed merits:

1. Enhanced Efficiency and Automation: Artificial intelligence-powered automation has revolutionized industries by streamlining processes, reducing errors, and increasing efficiency. For instance, in manufacturing, robots equipped with Artificial intelligence algorithms can perform repetitive tasks with precision and speed, leading to increased productivity. In the healthcare sector, Artificial intelligence systems can analyze vast amounts of medical data, aiding in diagnosis and treatment decisions, ultimately saving lives and improving patient outcomes.

2. Intelligent Decision-Making: Artificial intelligence algorithms can process and analyze vast volumes of data, extracting valuable insights and patterns that human analysts may overlook. This capability enables businesses to make informed decisions, optimize operations, and enhance strategic planning. For example, financial institutions leverage Artificial intelligence-powered algorithms to detect fraudulent activities in real-time, protecting customers and mitigating risks.

3. Artificial intelligence-driven personalization has revolutionized customer experiences. Online platforms utilize Artificial intelligence algorithms to understand user preferences, tailoring recommendations, and content suggestions. Virtual assistants, powered by Artificial intelligence, can comprehend natural language and provide personalized assistance, whether it's scheduling appointments, answering queries, or controlling smart home devices.

4. Advancements in Healthcare: Artificial intelligence has revolutionized healthcare by aiding in disease diagnosis, drug discovery, and treatment planning. Machine learning algorithms can analyze medical images and identify potential abnormalities, assisting radiologists in making accurate diagnoses. Artificial intelligence-driven drug discovery platforms can accelerate the identification of potential therapeutic compounds, expediting the development of new treatments.

“There could also be major progress in diagnosing disease with medical imaging. Computer-aided diagnosis (CAD) using MRI, CAT, or ultrasound devices is already as good as many human radiologists, according to multiple studies”⁶

5. Autonomous Vehicles: Artificial intelligence has propelled the development of autonomous vehicles, revolutionizing transportation. Self-driving cars utilize Artificial intelligence algorithms and sensor technology to navigate roads, interpret traffic patterns, and make real-time decisions, leading to enhanced road safety and more efficient transportation systems.

“We are in the midst of an artificial intelligence revolution. Artificial intelligence is now driving our cars, running our factories, and winning our game shows. There are many opportunities to take advantage of this nascent technology,”⁷

7. Improved Accuracy: Artificial intelligence algorithms can perform tasks with higher accuracy and consistency compared to humans.

8. Advanced Data Analysis: Artificial intelligence algorithms process vast amounts of data quickly, extracting valuable insights.

“In digital marketing, machine learning is already used to target particular publishers and individual customers with digital ads. Thousands of models a week are created for this purpose”.⁸

9. Predictive Analytics: Artificial intelligence models predict future outcomes based on historical data, aiding in proactive planning.

10. Faster Problem Solving: Artificial intelligence algorithms can rapidly analyze scenarios and provide solutions in real-time.

11. Efficient Resource Allocation: Artificial intelligence optimizes resource allocation, minimizing waste and maximizing efficiency.

“The exponential growth of data has inspired companies to gather and process information using a systematic approach. Marketers now require a sound working knowledge of new technologies that can allow them to analyse large volumes of data”⁹

12. Fraud Detection: Artificial intelligence identifies patterns and anomalies, aiding in the detection and prevention of fraudulent activities.

13. Healthcare Advancements: Artificial intelligence assists in medical diagnosis, drug discovery, and personalized treatment planning.

14. Natural Language Processing: Artificial intelligence understands and interprets human language, facilitating communication and information retrieval.

15. Autonomous Systems: Artificial intelligence powers self-driving cars, drones, and robotics, leading to safer and more efficient operations.

16. Improved Customer Service: Artificial intelligence chatbots and virtual assistants provide prompt and personalized customer support.

17. Scientific Discovery: Artificial intelligence aids researchers in analyzing complex data sets, accelerating scientific breakthroughs.

Artificial Intelligence (Artificial intelligence) has far-reaching implications for society, encompassing social, political, moral, ethical, existential, and religious dimensions. On a social level, Artificial intelligence impacts the workforce, prompting job transformations and economic shifts. It also influences social media platforms, information dissemination, and societal discourse. Politically, Artificial intelligence raises concerns regarding privacy, bias, fairness, transparency, and accountability, necessitating regulatory frameworks to ensure responsible use.

This is why

Will machines take over the world one day? Will they have human emotions? Will they be our friends or foes? Will they make our lives easier or will they wipe out the human labor force?¹⁰.

Moral and ethical reasoning become paramount as Artificial intelligence technologies evolve. Ethical questions arise regarding privacy protection, algorithmic biases, accountability for Artificial intelligence decisions, and the responsible development and deployment of Artificial intelligence systems. Ethical considerations guide discussions on the impact of Artificial intelligence on individual rights, societal values, and the greater good. This is why Ben Buchanan expresses that:

“If we manage this technology well, it will become a tremendous force for global good, lighting the way to many transformative inventions. If we deploy it too quickly and without adequate

foresight, AI will burn in ways we cannot control. If we harness it to destroy, it will enable more powerful weapons for the strongest governments on Earth as they engage one another in a combustible geopolitical competition.”¹¹

The existential implications of Artificial intelligence provoke contemplation about human identity, consciousness, and the potential consequences of creating intelligent machines. Questions of human uniqueness, moral agency, and the boundaries of technological advancements challenge traditional philosophical and ethical frameworks.

Furthermore, Artificial intelligence's impact extends to religious and theological realms. It raises profound questions about the nature of intelligence, consciousness, and the role of humans in a world increasingly intertwined with intelligent machines. Religious perspectives consider moral agency, the existence of the soul, and the implications of creating beings that possess artificial intelligence.

In Addition, partridge notes that:

“computers have moved us into domains of unbelievable com-plexity, and enable us to manage them fairly successfully-most of the time. In fact computers don't just enable us to deal with situations of far greater complexity than we could possibly manage without them they positively lure us into these domains of excessive complexity.The modern computer is an exceedingly seductive device,it tempts us with the promise of its great power, but it also entices the unwary to overstep the bounds of manageable complexity.”¹².

the above qoute explains how the influence of Artificial intelligence on society is multidimensional, requiring careful consideration and engagement from various stakeholders. It

calls for responsible decision-making, ethical practices, robust discussions, and collaboration to ensure that Artificial intelligence technologies serve the betterment of humanity while upholding societal values, fostering inclusivity, and navigating the complexities of our rapidly evolving technological landscape.

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CHAPTER THREE

3.1 ALAN TURING'S ANALYSIS OF ARTIFICIAL INTELLIGENCE

According to Copeland:

“One of Turing's significant achievements was the formulation of the Turing machine, a theoretical device that can simulate any algorithmic computation.”¹.

Hence, Alan Turing's work in the field of artificial intelligence has had a profound impact and continues to be influential in shaping the development and understanding of Artificial intelligence.

“Turing contributed to logic, mathematics, biology, philosophy, cryptanalysis, and formatively to the areas later known as computer science, cognitive science, Artificial Intelligence, and Artificial Life”².

While Turing's contributions are highly regarded, a critical evaluation of his work can shed light on both the strengths and limitations of his ideas.

Central to Turing's work is his TURING TEST where he proposes that if a machine can exhibit intelligent behavior indistinguishable from that of a human, then it can be considered intelligent this test was expressed on his seminal paper titled: seminal paper titled "Computing Machinery and Intelligence" Where he explores the possibility of machine intelligence and the challenges in defining and testing it. Turing posits that ;

“A computer would deserve to be called intelligent if it could deceive a human into believing that it was human.”².

Hence his emphasis on the Turing test which laid a foundation in determining human like Artificial intelligence or machines. One of the strengths of Turing's paper lies in his introduction of the Turing Test, which has become a fundamental concept in the field of artificial intelligence. The test proposes that if a machine can exhibit intelligent behavior indistinguishable from that of a human during a conversation, it can be considered intelligent. This concept sparked extensive discussions and further research on machine intelligence and the nature of consciousness. Turing's argument for the possibility of machine intelligence, based on the imitation game, is compelling. He highlights the role of conversation in determining intelligence, emphasizing that a machine's ability to convincingly respond to questions and engage in meaningful dialogue is an essential aspect of intelligence. This perspective challenges the traditional view that intelligence is solely the domain of human beings. Turing argues that the question of whether machines can think is closely tied to the question of whether they can imitate human behavior effectively. He proposes a scenario where a human engages in a conversation with both a machine and a human, without knowing which is which. If the judge consistently fails to identify the machine, then it can be said that the machine possesses intelligence.

In 1950, Alan Turing took a unique approach to the ongoing debate on how to define intelligence. He proposed a practical test known as the Turing test also known as the Imitation game.

3.2 THE IMITATION GAME

“I propose to consider the question, ‘Can machines think?’ This should begin with definitions of the meaning of the terms ‘machine’ and ‘think’. The definitions might be framed so as to reflect so far as possible the normal use of the words, but this attitude is dangerous. If the meaning of the words ‘machine’ and ‘think’ are to be found by examining how they are commonly used it is difficult to escape the conclusion that the meaning and the answer to the question, ‘Can machines

think?’ is to be sought in a statistical survey such as a Gallup poll. But this is absurd. Instead of attempting such a definition I shall replace the question by another, which is closely related to it and is expressed in relatively unambiguous words.

The new form of the problem can be described in terms of a game which we call the ‘imitation game’. It is played with three people, a man (A), a woman (B), and an interrogator (C) who may be of either sex. The interrogator stays in a room apart from the other two. The object of the game for the interrogator is to determine which of the other two is the man and which is the woman. He knows them by labels X and Y, and at the end of the game he says either ‘X is A and Y is B’ or ‘X is B and Y is A’. The interrogator is allowed to put questions to A and B thus: C: Will X please tell me the length of his or her hair? Now suppose X is actually A, then A must answer. It is A's object in the game to try and cause C to make the wrong identification. His answer might therefore be. ‘My hair is shingled, and the longest strands are about nine inches long.’

In order that tones of voice may not help the interrogator the answers should be written, or better still, typewritten. The ideal arrangement is to have a teleprinter communicating between the two rooms. Alternatively the question and answers can be repeated by an intermediary. The object of the game for the third player (B) is to help the interrogator. The best strategy for her is probably to give truthful answers. She can add such things as ‘I am the woman, don’t listen to him!’ to her answers, but it will avail nothing as the man can make similar remarks.

We now ask the question, ‘What will happen when a machine takes the part of A in this game?’ Will the interrogator decide wrongly as often when the game is played like this as he does when the game is played between a man and a woman? These questions replace our original, ‘Can

machines think?” The goal is to determine if the entity on the other side is a human or an Artificial intelligence.

Person B, who is either a human or an Artificial intelligence, engages in a conversation with Person A through the interface. Person A can ask questions, engage in discussion, and exchange information with Person B. The conversation can cover a wide range of topics. If Person A is unable to distinguish whether Person B is a human or an Artificial intelligence throughout the conversation and believes they are communicating with another human, then the Artificial intelligence can be said to have passed the Turing Test.

In essence, the Turing Test is a means to assess whether an Artificial intelligence system can exhibit intelligent behavior indistinguishable from that of a human being, fooling a human evaluator into thinking they are interacting with another human. It is worthy of note that Turing's test shifted the focus from abstract philosophical debates about intelligence to a practical assessment of a machine's ability to mimic human behavior convincingly. By emphasizing observable behavior and the capacity to engage in intelligent conversation, the Turing test provided a tangible framework for evaluating machine intelligence. This test continues to play a significant role in the development and assessment of artificial intelligence. Turing predicted :

“that machines would eventually be able to pass the test; in fact, he estimated that by the year 2000, machines with around 100 MB of storage would be able to fool 30% of human judges in a five-minute test, and that people would no longer consider the phrase "thinking machine" contradictory.”³

In 1991 the American philanthropist Hugh Loebner started

“the annual Loebner Prize competition, promising a \$100,000 payout to the first computer to pass the Turing test and awarding \$2,000 each year to the best effort”⁴

However, no Artificial intelligence program has come close to passing an undiluted Turing test. In late 2022, the advent of ChatGPT reignited conversation about the likelihood that the components of the Turing test had been met. If this has come to fruition, it brings us to signify Alan Turing’s prediction saying;

“once the machine thinking method had started, it would not take long to outstrip our feeble powers”.⁵

Hence the capabilities of Machines and Artificial intelligence could lead to many demerits.

3.3 MERITS/ LIMITATIONS OF THE TURING TEST

The Turing Test, proposed by Alan Turing in 1950, has both merits and limitations. Will be listed below;

MERITS OF THE TURING TEST

* **Simplicity:** Turing starts by asking this question; “Can Machines think?”⁶ hence, The Turing Test provides a straightforward and intuitive way to evaluate the intelligence of a machine by focusing on its ability to mimic human behavior in conversation.

* **Emphasis on Intelligent Behavior:** The test focuses on assessing the machine's ability to exhibit intelligent behavior rather than solely relying on specific technical capabilities or algorithms. “Turing proposed what subsequently became known as the Turing test as a criterion for whether an artificial computer is thinking”⁷

* **Human-Centric Evaluation:** The test puts human judgment at the center, as it seeks to determine if the machine can convince a human evaluator of its humanness through conversation.

* **Holistic Assessment:** The Turing Test takes a comprehensive approach by considering the machine's linguistic capabilities, reasoning skills, and understanding of context, providing a broader evaluation of intelligence.

* **Practical Relevance:** The Turing Test focuses on practical applications of Artificial intelligence, as it evaluates the machine's ability to engage in natural language conversations, which is a fundamental aspect of human interaction.

* **Flexibility:** The test does not impose restrictions on the specific domain or topic of conversation, allowing for a wide range of discussions that can test the machine's understanding and adaptability.

* **Promotes Advancements:** The Turing Test has stimulated research and development efforts in natural language processing, machine learning, and other Artificial intelligence subfields, driving advancements in conversational Artificial intelligence technologies.

* **Societal Impact:** The test considers the societal implications of Artificial intelligence, such as the potential for machines to exhibit intelligent behavior that can integrate into human society and facilitate communication.

LIMITATIONS OF THE TURINGS TEST

According to Kevin Warwick and Huma Shah 2016, Many disregarded Turing's theory which are as follows :

“Pinsky (1951), who discarded the idea of a thinking machine;

French (1990) who dismissed the imitation game as quixotic;

Hayes and Ford (1995) who consider it harmful for the study of artificial intelligence;

Lassègue (1996), who believes the imitation game "should be considered as an unconscious and mythical autobiography and not as a philosophical introduction to the main issues of AI";

Lenat (2001) says that it is a red herring".⁸

However, here are some contemporary objections:

- **Subjectivity:** The test relies on subjective judgments of human evaluators, making the results influenced by individual biases, preferences, and limited perspectives.
- **Inability to Assess Internal Processes:** The Turing Test does not provide insights into the internal workings of the machine or its decision-making processes, focusing solely on external behavior.
- **Lack of Objectivity:** The test lacks objective measures for intelligence and fails to address the question of whether the machine truly understands or possesses consciousness hence, this begs the question, "Is passing a Turing Test criterial for intelligence?"⁹. Because, if the machine doesn't truly understand it's outputs it can't be considered as intelligent .
- **Dependency on Human Mimicry:** The test primarily evaluates the machine's ability to imitate human behavior, potentially rewarding superficial mimicry rather than genuine intelligence."Turing thought of intelligence as emotional rather than mathematical"⁹
- **Narrow Definition of Intelligence:** The test primarily focuses on linguistic abilities and human-like conversation, which may not fully capture the breadth of human intelligence, including creativity, emotion, and other cognitive abilities. Hence,"Hayes and Ford (1995) remark that Turing's imitation game tests for competence in human conversation"¹⁰
- **Lack of Contextual Understanding:** The test may fail to assess the machine's deeper understanding of the context, nuances, and complexities of human experiences, as it mainly evaluates the machine's ability to provide plausible responses.

- **Insufficient Evaluation Criteria:** The test lacks specific criteria or benchmarks for measuring intelligence, making it challenging to quantify or compare the performance of different Artificial intelligence systems.
- **Possible Manipulation:** The test can be influenced by tactics used to deceive human evaluators, such as diverting conversations, providing ambiguous responses, or exploiting the evaluator's biases.
- **Lack of Objective Criteria:** The Turing Test relies on subjective judgments and does not provide clear objective criteria for determining the level of intelligence exhibited by a machine. This subjectivity can lead to inconsistent evaluations and interpretations of the test results.
- **Ignores Non-Linguistic Intelligence:** The test focuses primarily on language-based interactions, neglecting other forms of intelligence, such as visual perception, physical manipulation, and sensory understanding, which are crucial aspects of human intelligence.
- **Dependency on Human-like Behavior:** The Turing Test places significant emphasis on machines imitating human behavior. This emphasis can lead to the prioritization of mimicking human responses rather than fostering unique and innovative forms of machine intelligence."The consequences of machines thinking would be too dreadful. Let us hope and believe that they cannot do so."¹². hence, according to Roberts, machine only imitates and is dependent on human behavior.
- **Cultural and Linguistic Bias:** The test assumes a specific cultural and linguistic context, which may favor individuals who are familiar with certain cultural references or language patterns. This bias can lead to discrepancies in evaluations and limit the test's applicability across diverse cultures and languages.

- **Lack of Consciousness Assessment:** The Turing Test does not address the question of whether the machine possesses consciousness, self-awareness, or subjective experiences, which are essential aspects of human intelligence.
- **Potential for Deception:** Cleverly designed chatbot programs or strategies may deceive human evaluators without truly demonstrating intelligence. This raises concerns about the test's ability to differentiate between genuine understanding and programmed responses.
- **Insensitivity to Implementation Details:** The test focuses on the observable behavior of the machine without considering the underlying mechanisms or algorithms. This limitation can lead to cases where a machine exhibits intelligent behavior without truly understanding or reasoning.
- **Limited Scope of Evaluation:** The Turing Test does not account for the broader context, including the societal impact, ethical considerations, and potential biases embedded in Artificial intelligence systems. These aspects are crucial for a comprehensive evaluation of Artificial intelligence technologies.

One must not that this Turing test, has sparked several debates about Artificial intelligence in philosophy including Consciousness .

3.4 THE DISTICTION BETWEEN THINKING AND ACTING

Alan Turing's view on Artificial intelligence, as outlined in his seminal paper "Computing Machinery and Intelligence," has received both praise and critique. One key aspect of critique relates to the distinction between thinking and acting in his formulation. Turing proposed that the ability to exhibit intelligent behavior is sufficient to attribute "thinking" to a machine. He argued that if a machine could generate responses indistinguishable from those of a human during a conversation, it would demonstrate intelligent thinking. This perspective implies that

thinking can be equated with external behavior alone, irrespective of the internal cognitive processes. Turing's view begs the argument that this behaviorist approach overlooks the distinction between thinking and mere acting. Intelligent behavior does not necessarily reflect the presence of conscious thought or true understanding. The ability to mimic human responses does not guarantee that a machine possesses subjective experiences or internal mental states akin to human cognition.

Moreover, Turing's test primarily focuses on linguistic interactions, neglecting other forms of intelligence and aspects of cognition, such as emotion, creativity, and abstract reasoning. By reducing intelligence to language-based behavior, the test fails to capture the full scope of human intellectual capabilities.

Additionally, Turing's formulation assumes that "thinking" can be reduced to the ability to imitate human behavior, which has been criticized for being too behavior-centric. Some argue that true thinking involves internal mental processes, including cognitive representations, problem-solving strategies, and conscious awareness. Thus, Turing's definition may oversimplify the complexity of human cognition.

In all, by the Chinese Room Argument objection, put forth by John Searle, challenges the idea that a computer can genuinely understand or have conscious experiences. Searle argues that even if a computer passes the Turing Test by simulating intelligent behavior, it does not possess true understanding or consciousness.

However, kok seems to posit otherwise as he believes that Artificial intelligence has the potential of learning and recreating and can be tagged as thinking to solve problems. He quotes :

“AI consists of numerous techniques that mimic intelligent behavior

and/or show some learning behavior.” 13

This expresses that , that with this learning technique Machine can think with the data provided and create novel Ideas.

In the next chapter, we will vividly elucidate the potentiality of a thinking Artificial intelligence .

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CHAPTER FOUR

4.1 EVALUATION

Now that machine can think, what next? From the analysis of the previous chapters, we have been able to understand what Artificial intelligence is, uses, merits and demerits. Also, Analyzing Alan Turing stance on Analyzing the efficiency of Artificial intelligence as merely an acting resource, but with technological advancements in this 21st century, we can see that some artificial intelligent machines, have the ability to reason and give human like responses this defeats Turing's idea that machine can only act and not think. Now, with this new development and having established that Artificial intelligence has the ability to think and give human like responses.e.g chat gpt,Amazon Alexa, iphone siri, Google assistant E.T.C. This gives a different turn to the many possibilities of a Thinking Machine or Artificial intelligence which makes it difficult to differentiate hence, leading to so many existential problems like Identity issues and detrimental issues which most people see as the birth of “The Artificial intelligence species” which poses existential crises.

The world is entering a stage of transformation, which we will be surprised at the scale of developments. One of this surprising developments is what Artificial intelligence/ Technology offers. But we should note, that with the breakthrough development, comes with new responsibilities and problems that one should take caution of to make right decisions hence, harnessing and controlling technological developments so that it can fulfill its primary purpose instead of going overboard and causing harm. This is one of the important information that humans forget to have at the back of their minds.

Eliza yudkowsky quotes

” by far, the greatest danger of artificial intelligence, is that people conclude too early that they understand it.”¹.

In 1993, computer scientist vernor virge wrote;

“Within 30 years, we will have the technological means to create super human intelligence shortly after, the human era will be ended. Is such posses avoidable? If not avoidable can events be guided so that we may survive”.²

From the above qoute, although, this breakthrough in technology has surpassed virge prediction of 30years but his notion about the human era might still be true because technology and Artificial intelligence continually test the depths of Artificial intelligence bringing life to robotics, and technologies with a mindset of their own.

This begs some philosophical questions like;

What ethical considerations should be taken into account when developing and deploying Artificial intelligence systems that interact with humans?

Will the transhumanist movement come into fruititton?

How do we determine the moral responsibility for actions taken by autonomous Artificial intelligence systems?

Should Artificial intelligence creators, users, or the Artificial intelligence itself be held accountable?

Can Artificial intelligence ever possess creativity and originality, or is it merely replicating patterns based on data it has been fed?

Does the advancement of Artificial intelligence threaten the uniqueness and value of human existence, or does it enhance our capabilities and understanding of ourselves?

How does the existence of Artificial intelligence impact our understanding of free will and determinism?

What role should Artificial intelligence play in decision-making processes, such as in governance, healthcare, or finance, and how do we ensure transparency and fairness?

Is it morally justifiable to create Artificial intelligence systems that mimic human emotions and relationships, blurring the lines between human and machine?

How does the potential for Artificial intelligence to outperform humans in intellectual tasks affect our perception of human intelligence and worth?

Can Artificial intelligence ever possess moral reasoning and empathy, or are these qualities inherently limited to human consciousness?

Nikola Tesla quotes:

“You may live to see man made horrors beyond your comprehension”³

Hence, with the above quote, the responsibility lies in our hands to navigate these technological advancements wisely.

Leonhead posits that “I believe we can find a balanced way forward that will allow us embrace technology but not become technology, to use it as a tool and not as a purpose.”⁴

following the above quote, We shall analyze some prospective threats which includes existential threats, Ethical threats e.t.c of Artificial Intelligence. They are as follows;

1. Job Displacement and Societal Implications:

One of the primary concerns associated with Artificial intelligence is its potential impact on employment. As Artificial intelligence technology evolves, it possesses the capability to automate tasks previously performed by humans, leading to widespread job displacement. This has significant implications for the workforce and socio-economic structures. As Artificial

intelligence becomes more sophisticated, it is crucial to navigate the transition to an Artificial intelligence-powered future by reimagining education and training programs, fostering entrepreneurship, and creating new avenues of employment.

2. Ethical Decision-Making in the Age of Artificial intelligence

Ethics play a critical role in the development and deployment of Artificial intelligence systems. As Artificial intelligence algorithms make decisions that affect human lives, it becomes imperative to ensure transparency, fairness, and accountability. Ethical considerations in Artificial intelligence range from avoiding biases in algorithmic decision-making to addressing the ethical dilemmas posed by autonomous systems. Human oversight and the development of robust ethical frameworks are essential to guide Artificial intelligence systems towards responsible and ethical behaviors.

3. Privacy in the Digital Era: Balancing Artificial intelligence Advancements and Personal Data Protection

The proliferation of Artificial intelligence is closely tied to the availability and utilization of vast amounts of data. However, this raises concerns regarding privacy in the digital era. Striking a balance between harnessing the benefits of Artificial intelligence and protecting individual privacy rights is a complex challenge. It requires implementing robust data protection regulations, promoting data anonymization techniques, and providing individuals with control over their personal information. Safeguarding data security is of paramount importance to prevent unauthorized access or misuse of sensitive data.

4. Power Dynamics and Artificial intelligence: Distribution and Control

The development and deployment of Artificial intelligence technologies often give rise to power dynamics and issues of distribution and control. Certain entities may accumulate disproportionate influence, leading

to monopolization and potential misuse of Artificial intelligence. It is crucial to promote inclusivity, democratization, and transparency in the development of Artificial intelligence systems. By ensuring a diverse range of stakeholders have a say in Artificial intelligence governance, we can strive for equitable access and prevent the concentration of power. And influence decisions on the creation of ethical Artificial intelligence.

5. Superintelligent Artificial intelligence: Potential Implications and the Future of Humanity
The concept of superintelligent Artificial intelligence, machines surpassing human intelligence, introduces profound existential risks. While its potential benefits are immense, it is crucial to navigate the path ahead cautiously. We must address concerns regarding value alignment, ensuring that the goals and behavior of superintelligent Artificial intelligence align with human values and well-being. Ongoing research into Artificial intelligence safety, robust control mechanisms, and collaboration between Artificial intelligence developers and ethicists are imperative to mitigate risks and shape the future of humanity positively.

6. Artificial Intelligence Biased Epistemology and /Data: This can be summarized with the phrase (gabbage in and gabbage out) What ever data you put into Artificial intelligence be it good or bad is the same data it produces, even if it was restructured. This poses as a problem because, Artificial intelligence models learn from vast amounts of training data, which may contain inherent biases present in society. If Artificial intelligence is trained on biased data, it may produce biased outcomes, perpetuating discrimination and unfair treatment. Example: An Artificial intelligence-powered hiring tool that learns from historical hiring data may unintentionally discriminate against certain groups due to historical hiring practices and biases in the data.

7. .Weaponization of Artificial Intelligence: The militarization and weaponization of Artificial intelligence raise significant ethical concerns. Autonomous weapons and Artificial intelligence-powered cyber-attacks can potentially escalate conflicts and lead to unpredictable consequences. Example: The Hiroshima Bomb On August 6, 1945, the United States dropped an atomic bomb named "Little Boy" on the Japanese city of Hiroshima, followed by another bomb, "Fat Man," on Nagasaki on August 9th. The bombings resulted in devastating consequences, with the immediate death toll estimated at over 200,000 people, most of whom were civilians. The impacts of radiation exposure and long-term health effects have continued to affect the affected regions for generations. With the impact of this bomb and the disaster it created, this serves as a poignant historical example of the weaponization of advanced technology and the profound ethical implications it carries.

8. Glitch in Artificial intelligence:

Glitches in Artificial intelligence and robotics refer to unexpected and often undesirable malfunctions or errors in the behavior of artificial intelligence systems or robotic devices. These glitches can have various causes, from software bugs to hardware failures,Glitches in Artificial intelligence and robotics can lead to significant risks and consequences. Here are some realistic examples of the potential risks involved: A glitch in an autonomous vehicle's perception system could cause it to misinterpret its surroundings, leading to a dangerous accident on the road. Causing safety hazards. A glitch in a smart home security system may expose personal data, allowing unauthorized access to private information. A glitch in an industrial robot's control system could lead to production delays and financial losses for a manufacturing company. A glitch in an Artificial intelligence hiring tool could result in biased decisions, favoring certain demographics and perpetuating discrimination.

8. Privacy Concerns: The widespread use of Artificial intelligence in data-driven applications raises concerns about data privacy. Artificial intelligence systems often require vast amounts of personal data, and improper handling of this data can lead to privacy breaches. Privacy concerns related to Artificial intelligence arise due to the extensive collection, processing, and use of personal data by Artificial intelligence systems. Here are some examples that illustrate how Artificial intelligence's use of personal data can lead to privacy breaches example of how examples of how it can pose as existential privacy threats are :

8.1 Social Media Data Exploitation: Artificial intelligence algorithms used by social media platforms collect and analyze vast amounts of user data to personalize content and advertisements. However, improper handling or sharing of this data with third parties without user consent can lead to privacy violations. many people use social media to stalk, know the whereabouts of people and even analyze a persons life. With social media, you can know 98 percent of a persons life especially those who use it constantly Hence, posing a risk to the individual when used negatively Artificial intelligence healthcare Artificial intelligence system uses patient medical records to provide personalized treatment recommendations. If the data is not properly secured and becomes accessible to unauthorized individuals, it can lead to medical identity theft or discrimination.

8.2 Smart Home Devices: Artificial intelligence-powered smart home devices, like voice assistants, process voice commands and store recordings for improvement. However, unauthorized access to these recordings can invade users' privacy. Example: A smart speaker records conversations in a household to improve voice recognition. If these recordings are accessed by malicious actors or unauthorized parties, it violates the privacy of the family.

8.3 An Artificial intelligence-powered surveillance camera in a public space captures and analyzes people's faces without their consent. This data may be used for various purposes, raising concerns about surveillance without individual knowledge.

8.4 Data Breaches and Hacks: Artificial intelligence systems can be vulnerable to data breaches or hacks, leading to unauthorized access to personal data. Example: An Artificial intelligence-driven e-commerce platform stores customer data, including payment information. If the platform's security is compromised, hackers can gain access to sensitive personal information.

8.5 An Artificial intelligence hiring tool uses social media data to analyze job applicants' profiles. If the tool collects information about a candidate's age, race, or other protected characteristics, it can lead to biased hiring decisions

9. Deep fake technology and misinformation: Deepfakes are Artificial intelligence-generated media, often videos or audio, that convincingly manipulate and replace a person's likeness with someone else's. They utilize advanced machine learning algorithms, particularly deep neural networks, to create highly realistic and seamless fake content. While deepfakes can be used for harmless entertainment or creative purposes, they also pose serious risks, particularly in spreading misinformation and deceiving the public. Here are some examples that illustrate the potential consequences of deepfakes. Political Manipulation: Deepfakes can be used to create fabricated videos of political figures, candidates, or world leaders saying or doing things they never did. Such videos could be disseminated on social media or news platforms to influence public opinion or damage a person's reputation. Example: A deepfake video is created to show a politician making inflammatory and controversial statements, leading to widespread outrage and negative media coverage. Despite being entirely fake, the video creates significant public

discourse and influences political discussions. Like the one used against Peter Obi during the 2023 elections. Fake News and Misleading Content, Deepfakes can be utilized to create fake news stories or misleading videos that appear authentic, leading to the spread of false information. Example: A deepfake video is circulated on social media, purportedly showing a celebrity endorsing a questionable product. The video appears genuine, leading many to believe the product is legitimate, despite the endorsement being entirely fabricated. Deepfakes can be exploited for financial gain, such as by creating fake videos or audio impersonating company executives to deceive investors or manipulate financial markets. Example: A deepfake audio recording is created to mimic a CEO's voice, announcing false financial information about a company. This leads to stock market fluctuations and financial losses for investors who acted based on the fake information. Deepfake technology can be misused to create explicit or compromising content of individuals without their consent, leading to blackmail or public humiliation. Example: An individual's face is superimposed onto explicit content through deepfake technology, and the manipulated video is used to threaten and extort money from the victim. Deepfakes can be utilized in targeted cyber-attacks, where the attacker impersonates a trusted individual to deceive employees or gain unauthorized access to sensitive information. Example: An employee receives a deepfake video purporting to be from their supervisor, instructing them to share sensitive company data or transfer funds to a fraudulent account.

This points above shows the potential risks of Artificial intelligence and the rate at which it is disastrous. Hence, Emphasizing the frugal and cautious use of Artificial intelligence.

4.2 RECOMMENDATIONS

The aim of philosophy is to critically analyze, evaluate ,highlight problems and even propose recommendations to these problems. Addressing the challenges and risks associated with Artificial intelligence requires careful consideration and responsible development.Stephen Hawking a renowned physicist posits that:

“:Success in creating Artificial intelligence would be the biggest event in human history. Unfortunately, it might also be the last unless we learn how to avoid the risks.”⁵

- Ethical Artificial intelligence Frameworks: Develop and adopt ethical frameworks for Artificial intelligence development that prioritize transparency, fairness, and accountability.
- Ethical Guidelines: Establish robust regulatory system, guidelines and international standards to ensure the responsible deployment of Artificial intelligence technologies.
- Responsible Data Collection: Ensure that data use to train Artificial intelligence models is collected responsibly, with respect for privacy and consent.
- Bias Mitigation: Implement techniques to identify and mitigate biases in Artificial intelligence algorithms to ensure fairness and avoid perpetuating discrimination.especially for races, sex E.T.C.
- Human-Artificial intelligence Collaboration: Promote human-Artificial intelligence collaboration, this enhances clear understanding to the Artificial intelligence users who has little or no understanding to the risks of Artificial intelligence. While emphasizing the complementary strengths of each and ensuring human oversight in critical decision-making.
- Artificial intelligence Education and Literacy: Invest in Artificial intelligence education and noting that Artificial intelligence is a tool and not a substitute to replace humans. Also,

equipping individuals with the knowledge to understand and engage with Artificial intelligence technologies.

- Artificial intelligence and Job Reskilling: Implement initiatives for to avoid falling into the mistakes of using Artificial intelligence the wrong way reskilling and upskilling the workforce to adapt to the changing job landscape due to Artificial intelligence.

- This can serve as a solution to job losses To Artificial intelligence, we can upskil and find more ways to work With Artificial intelligence so has to produce more or get more work done .

- Ensure that Artificial intelligence applications are encoded, to reject negative actions.. As Artificial intelligence technology continues to advance rapidly, it becomes increasingly crucial to ensure that Artificial intelligence systems operate safely, ethically, and in alignment with human values. risks associated with advanced Artificial intelligence systems.

- Public-Private Collaboration: Foster collaboration between governments, academia, and the private sector to develop Artificial intelligence solutions with a focus on the public interest.

- Artificial intelligence in Education: Integrate Artificial intelligence into educational curriculum to equip students with Artificial intelligence skills and foster responsible Artificial intelligence use in the future.

- This will help people to be knowledgeable about using Artificial intelligence and not Artificial intelligence using us.

“You need to put, your resources into technology, into our education system. Into our universities, industries and ideas. Into the strongest of our society. Into the brightest of our society. Into the best of our society. So that we can attain the future.seurity measures to protect against potential threats and attacks.”⁶

- Artificial intelligence Ethics Boards: Establish independent Artificial intelligence ethics, Artificial intelligence-driven cybersecurity measures empower organizations to defend against potential threats and attacks more effectively. By leveraging Artificial intelligence's capabilities in threat detection, analysis, automated response, and adaptive defense, cybersecurity systems can better safeguard critical assets and data from the ever-evolving landscape of cyber threats. These Artificial intelligence-based solutions not only enhance protection but also offer scalability, efficiency, and reduced response time, making them essential components of modern cybersecurity strategies. However, we should penalize unethical usage of Artificial intelligence. This includes behaviors such as hacking, manipulating algorithms, compromising privacy and confidentiality, or stealing identities. Efforts to hijack Artificial intelligence in order to solicit confidential information should be seriously penalized as a way to deter such actions.

- By implementing these recommendations, we can create awareness. Campaigns play a vital role in promoting responsible and informed usage of Artificial intelligence. By educating the public about Artificial intelligence risks, benefits, and ethical considerations, these campaigns empower individuals to make thoughtful decisions regarding Artificial intelligence adoption and ensure that Artificial intelligence technology aligns with human values and societal goals. As Artificial intelligence continues to impact various aspects of our lives, fostering public understanding and engagement is crucial for harnessing its potential while safeguarding against potential pitfalls. Using transformative potential of Artificial intelligence while addressing its challenges responsibly, ensuring that Artificial intelligence contributes positively to society and aligns with human values and ethical principles.

“It is hard to comprehend what capabilities that the level of intelligence would represent but it would surely be far beyond anything we have witnessed or could imagine”⁷.

CONCLUSION

In conclusion, the rise of artificial intelligence, marks a profound turning point in human history, challenging our understanding of consciousness, ethics, and the very essence of what it means to be human. As Artificial intelligence evolves and exhibits remarkable capabilities, it is crucial for us to approach this technological revolution with both awe and caution. Artificial intelligence's ability to reason, learn, and simulate huma-like responses has shattered the notion that machines can merely act without true cognition. This newfound "thinking" capability raises existential questions about the nature of identity, morality, and the boundaries between humans and machines. As we witness the emergence of what some may refer to as "the Artificial intelligence species," it becomes paramount to navigate these uncharted waters with profound philosophical contemplation. Throughout history, humanity has always been intigued by its own creations, from myths of animated statues to modern depictions of self-aware machines. The advent of Artificial intelligence challenges us to redefine our understanding of intelligence, consciousness, and self-awareness, provoking us to explore the depths of our own humanity. In this pursuit, we must resist the temptation to prematurely conclude that we fully comprehend Artificial intelligence's complexities. Eliza Yudkowsky aptly warns us that the greatest danger of artificial intelligence is underestimating its true nature.

The prospect of superhuman intelligence, as foreseen by Vernor Vinge, presents both breathtaking possibilities and daunting uncertainties. The question of whether the human era can transcend beyond the emergence of Artificial intelligence superintelligence remains an open-

ended enigma. In this era of transformation, the scale of Artificial intelligence's developments leaves us astonished, yet we must approach these advancements with an acute sense of responsibility. To harness Artificial intelligence's potential while mitigating its rations of Artificial intelligence's applications in areas such as job displacement, privacy breaches, and weaponization. To navigate these challenges, we must be vigilant in fostering inclusivity, digital literacy, and reskilling initiatives. Embracing Artificial intelligence for social good can offer transformative solutions to global challenges, provided that we adhere to a shared commitment to human well-being. We should approach Artificial intelligence's journey with humility, acknowledging that the path ahead is riddled with uncertainties and moral complexities. As Nikola Tesla prophesied, we may witness horrors beyond our comprehension, and the responsibility lies in our hands to navigate these technological advancements wisely.

The Artificial intelligence revolution demands that we transcend through the, boundaries of technological prowess and embrace the virtues of human wisdom and empathy. As we grapple with the potential outcomes of Artificial intelligence, let us not be driven solely by innovation and progress but instead be guided by a deep reverence for life and a shared commitment to the betterment of humanity. But still, this leaves us with a question Brain smith asks:

“Are we genuinely on the cusp of what we only prematurely imagined in the 1970s? Or is this, too, a phase destined to pass?”⁸

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