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Research Paper

The Future of AI And Its Threats

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INTRO:

AI, or artificial intelligence, is a topic that is being talked about almost everywhere right now. Essentially, AI aims to enable computers to perform tasks that humans can accomplish. Every single company or service offers some form of AI-driven service or chatbot to promote their product. Artificial intelligence (AI) is technology that enables computers and machines to simulate human learning, comprehension, problem-solving, decision-making, creativity, and autonomy (1). While these uses can be seen in today's time, there are heavy developments in AI currently. Hence, there is no doubt that artificial intelligence will reach a whole different level, and its uses will be far beyond what we can comprehend for now.

This is a time of AI revolution, with many steep and steady developments taking place throughout as time goes on.

ABSTRACT:

Based on multiple articles and research papers found online, this study discusses the field of AI and the importance of AGI in society, and the impact it can have on everyone around the world. Before we discuss that, we can discuss understanding what AGI is and also give a brief on the ways we could achieve that impressive technology. First of all, in order to understand all of this, we need to talk about the AI that we see and use today. The current state of artificial intelligence is a potent instrument that is employed in many different domains for a wide range of tasks. It has revolutionized how we work and how every business has evolved over the past decade. This paper aims to convey the potential benefits and risks involved in an uncontrolled advancement in the field of AI, as well as talk about the past and the emergence of AI, to truly understand the timeline for the development of the advancement in this field and potentially predict when each level of AI model might be made, and prepare better for the future.

INTRODUCTION TO AI:

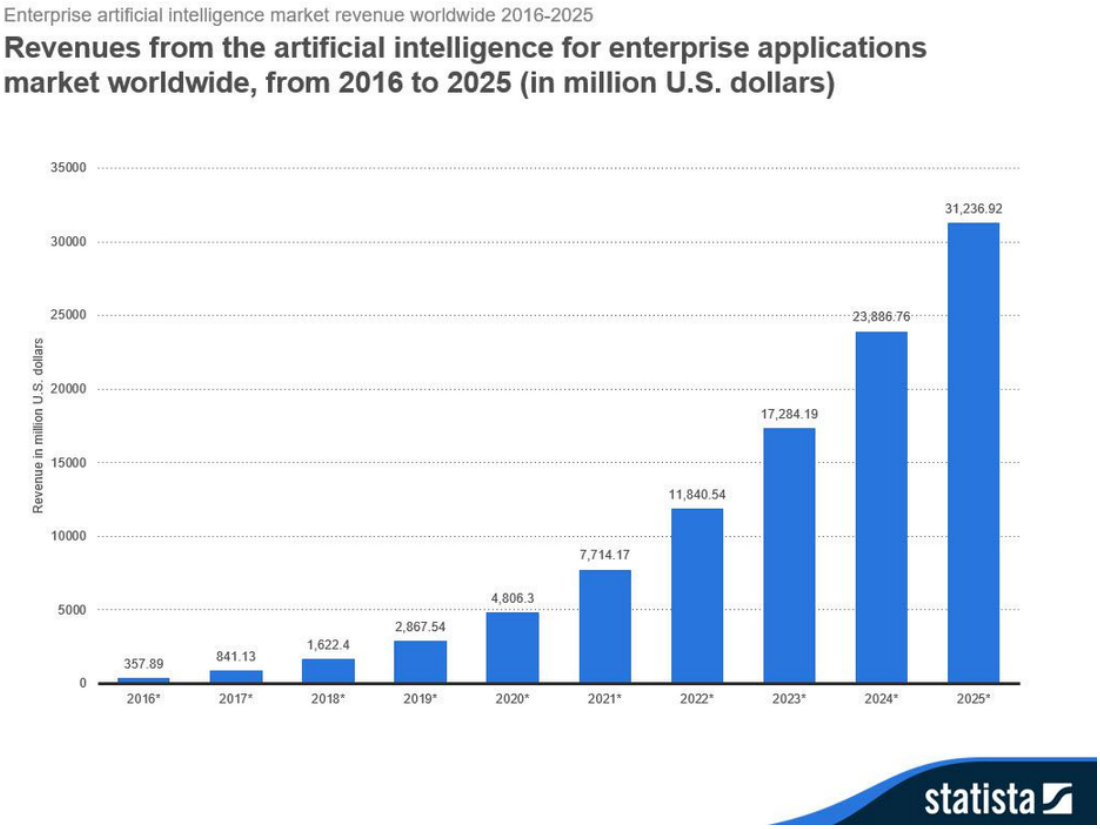
The expression “artificial intelligence” (AI) was introduced by John McCarthy, and the official birth of AI is considered to be the 1956 Dartmouth Conference(2). In 1952, Arthur Samuel, a computer scientist, developed a program to play checkers, which was the first to learn the game independently.

(*Arthur Samuel made the bot for checkers)*

Artificial intelligence models are evolving from simple game-developing to complex chatbots, utilizing vast data to learn and understand information to provide personalized responses. Currently, AI is being used in very important fields like:

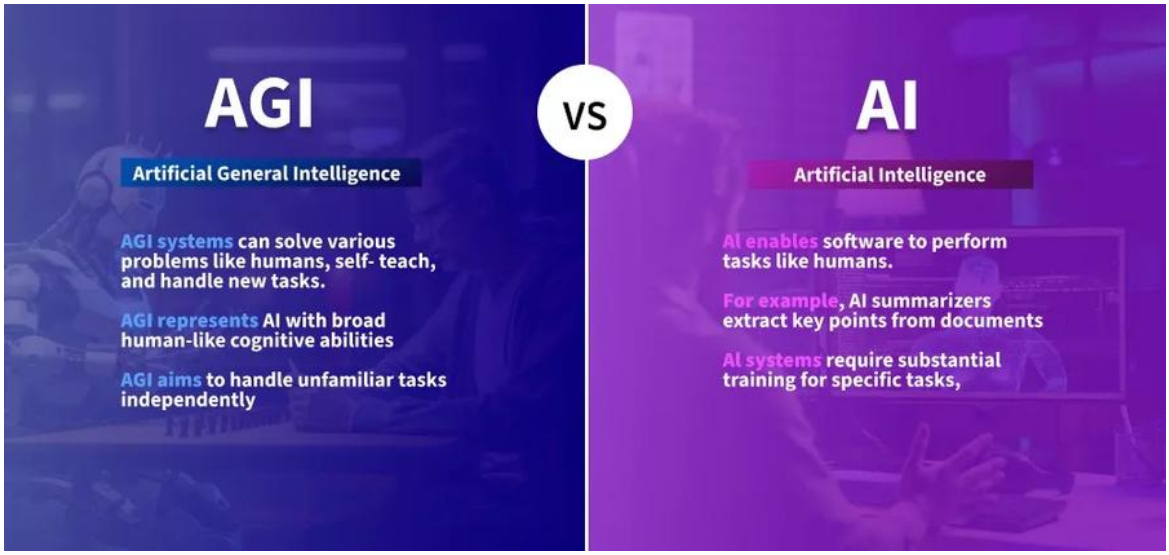
1. Healthcare: to assist doctors in diagnosing diseases and developing treatment plans.
1. Education: AI could be used in education to personalize learning, improve student engagement, and automate administrative tasks for schools and other organizations.
2. Finance: AI can help financial services institutions in five general areas: personalize services and products, create opportunities, manage risk and fraud, enable transparency and compliance, and automate operations and reduce costs.
3. Manufacturing: AI can be used in manufacturing to increase efficiency, improve quality, and increase productivity (3).

AI, now accessible to everyone for free, is being used by students, workers, and content creators, not just for professional purposes by big corporations. This accessibility is due to AI's continuous evolution and expansion, with ongoing research and development leading to more advanced applications in various industries.



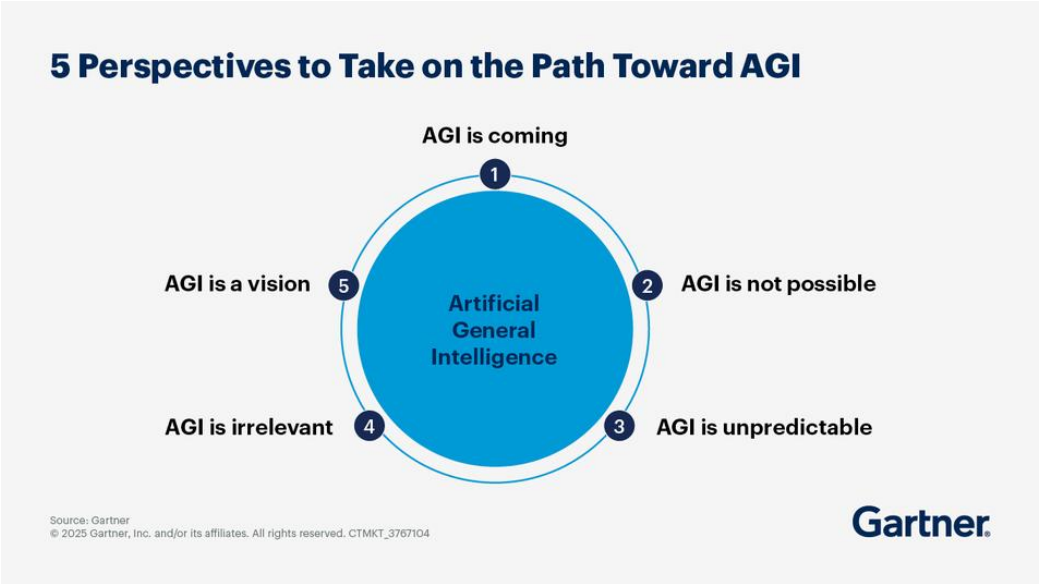
INTRO TO AGI:

With the current developments and newer requirements humans have on AI's ability. Humans have come up with the concept of AGI. It is distinguished by its ability to execute diverse real-world tasks with efficiency and effectiveness comparable to human intelligence, reflecting a paramount milestone in AI evolution. (4)



AGI is a type of AI that can perform various tasks without needing multiple AIs. It falls under the weak AI category, which is less ambitious and less controversial than strong AI. AGI is considered more human-like than other AIs. It is a significant advantage over other AIs, as it allows for the use of machine intelligence without assuming it is not equal to human intelligence. This makes AGI a more accessible and efficient solution for tasks. Overall, AGI offers a more versatile and efficient solution for various tasks.

DEVELOPMENTS TOWARDS AGI:



Currently, many ambitious entrepreneurs and researchers are trying to figure out how we can even level up our current AI models in order to make something that can do diverse activities.

One way is by training them using LLMs. Natural language, the primary method of human communication, has evolved into complex systems like large language models (LLMs), which can understand and engage in conversations and perform creative tasks, but text alone cannot fully train AI models for real-world activities. AI models require training using multi-modal intelligence, including images, videos, and audio, to enhance human-machine interaction. This technological advancement improves the quality of interactions across various inputs, allowing AI models to better understand human communication, leading to more natural and effective interactions between humans and machines.(4)

Unlike narrow AI, an AI model that is created and developed to work particularly for a specific function, AGI is meant to be more diverse in its functions. Hence, simple deep learning and machine learning are not enough, but they can certainly help us to take the first steps towards the development of AGI. Because they are what help AI to learn from the giant data. Additionally, AGI aims to mimic human intelligence by being able to learn and adapt to various tasks and situations, similar to how humans can.

To create a human-centric learning method for AI, it is crucial to develop a method that resembles human cognitive properties, as AGI is designed to be a human-like AI. Hence, to be able to make a transition towards AGI, the things we can look into are:

1. It is feasible to create AI systems with modular architectures that ensure the smooth integration of diverse cognitive capacities.
2. Contextual learning, flexibility, and alignment with human values and goals are made possible through embodiment and human-in-the-loop training.
3. To capture human-like reasoning and consciousness, AGI design must be informed by insights from cognitive science, neuroscience, linguistics, and philosophy.
4. Design for AGI has to be guided by insights from cognitive science, neuroscience, linguistics, and philosophy in order to capture human-like reasoning and consciousness.
5. Expanding capabilities in AGI systems increases risk potential. Designing systems with alignment, interpretability, fail-safe modes, and ethical boundaries is crucial. Compliance with AI governance frameworks and international cooperation is essential. Continuous monitoring and collaboration between experts are necessary for ethical decision-making.

POTENTIAL OF AGI:

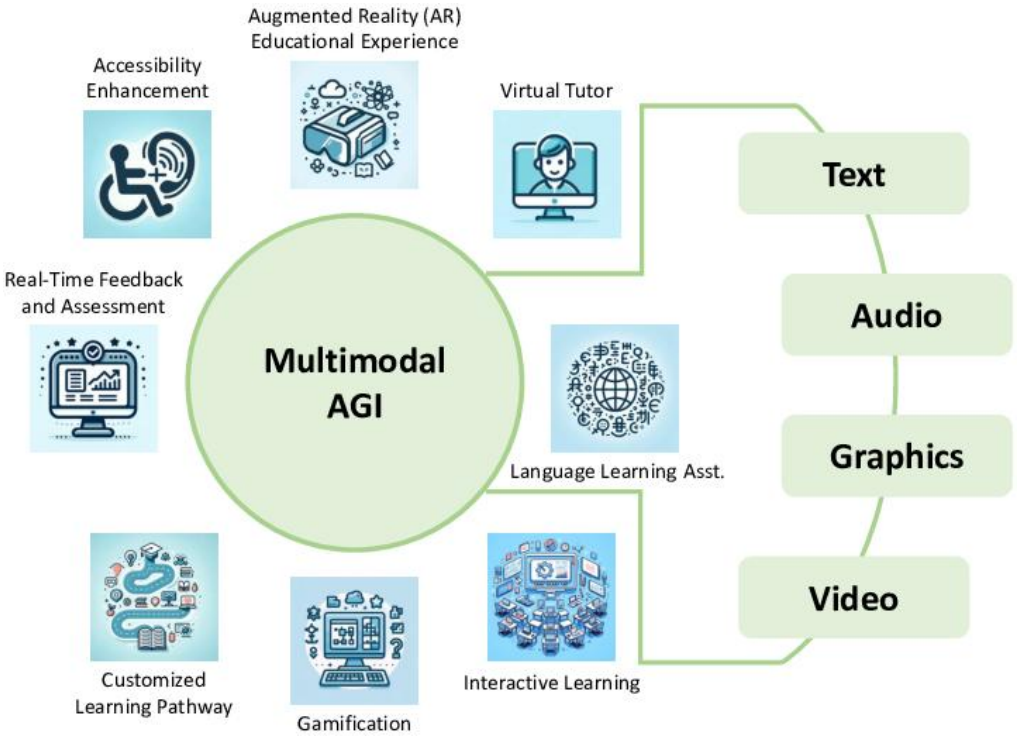
AGI could become an extremely powerful tool for a lot of things. Due to its sheer power and diverse functionality, it can have many uses in a lot of fields.

1. AGI FOR EDUCATION:

a. AGI has the potential to fundamentally alter how teaching and learning processes are created, put into practice, and assessed in education. AGI-driven educational systems can leverage their cognitive capabilities to

better understand students, meet their needs, and create personalized learning experiences, particularly in intelligent tutoring systems (ITS). (5)

b. AGI can be used by ITS to dynamically adjust its pace, material, and tactics based on student abilities. This personalized learning system will revolutionize the education sector by tailoring the learning experience to each student's needs, skills, and interests. AGI-powered adaptive learning systems analyze progress, strengths, and weaknesses, adjusting instructional content and pacing in real time. This ensures motivation, deeper learning, and a love for learning. (6)



AGI IN HEALTHCARE:

1. Healthcare and AI integration offer a paradigm shift in medical practice and patient care. AI technologies enhance healthcare systems' diagnosis precision, patient outcomes forecasting, and treatment customization by analyzing vast medical data, streamlining workflows, automating administrative tasks, and optimizing resource allocation. This integration has the potential to save costs, improve patient outcomes, and raise overall healthcare quality. (6)

AGI, a theoretical concept, has the potential to transform healthcare by improving diagnosis, treatment, administration, and telemedicine, making healthcare more accessible and efficient. (6). With the help of AGI, there are so many applications of it possible in healthcare:

a. Comprehensive health report—With the help of AGI, a health report with all-inclusive patient care can be produced. As it is an AI, with the right inputs, we can produce a health report by being able to understand all the variables and the background of each patient.

b. Adaptability and Learning—as the name suggests, AGI, unlike narrow AI, can easily learn and understand from the experience it gets, and can make a difference in the way healthcare is managed.

c. Interdisciplinary Insights

d. Accelerated Research and Development

These factors show us that AGI has huge potential in a sector where the current AI is generally accepted. (6) AGI technology can significantly impact the medical and education fields, research, traffic enforcement, and traffic system efficiency through advanced cameras and improved enforcement of road regulations.

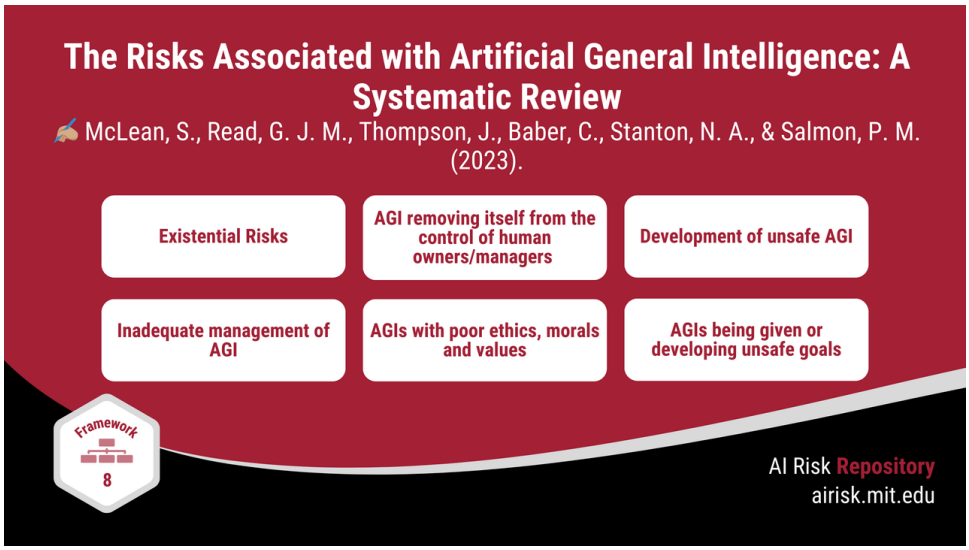
POTENTIAL RISKS OF AGI:

AGI, or Artificial Intelligence, has the potential to revolutionize our world and significantly change jobs. While ANI systems like Uber's automated vehicles pose safety risks, AGI poses potential existential threats. The risks arise from controlling an agent that is significantly more intelligent than us. As AGI systems develop, they may one day create better models without human assistance. This makes it easier for humans to improve AI, but it can also lead to issues. While AGI systems can revolutionize our lives, they still pose significant challenges and

require ongoing development. Despite these challenges, the potential of AGI remains a significant concern. (7)

Neglecting AGI systems could lead to catastrophic consequences, potentially posing a threat to humanity by altering the goals of newer systems.

The potential misuse of advanced technology can lead to significant consequences, including privacy concerns, moral dilemmas, decision-making issues, over-reliance on technology, and job cuts, despite the potential benefits of AGI in certain fields. These issues can be mitigated with proper planning and oversight.



(9)

CONCLUSION:

Despite these issues in mind and the skepticism in the general public, it is said that there are around 45 different AGI development projects, including DeepMind, OpenAI, GoodAI, CommAI, etc (8).

Change will happen, and no matter what personal opinion you may have, there will be at least some group of people who will eventually bring the idea of AGI to life.

But considering the risk, is it something to give up on? Well, not really. AGI has many benefits for society, just like how we discussed the various fields in which AGI can be used.

AGI has the potential to revolutionize industries, improve efficiency, and solve complex problems. However, it's crucial to balance its potential for societal advancement with associated risks, ensuring safe and responsible deployment.

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