

Forum: The Group of 20 (G20)

Topic: Regulating Artificial Intelligence and Emerging Technologies in the Global

Economy

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Position: President

Personal Introduction

Dear all.

My name is Dimitris Hargitt and I am an IB2 student from Costeas-Geitonas School in Pallini. I am excited to be your President in this year's G20 at Logos MUN, as I find G20 to be one of the most unique and interesting fora, by far. Additionally, I am looking forward to helping you learn and develop your skills, whether those are writing, speaking, or critical thinking. MUN can truly be one of the things you cherish most in your high school years if you learn to see it in the right way, and I hope you all achieve that.

If you need any assistance with anything discussed in this guide, please contact me (and don't ask ChatGPT) at <<u>jiahrgtt@gmail.com</u>>.

Sincerely, Dimitris Hargitt

Introduction

Artificial Intelligence (or, more commonly, AI) is probably the largest technological innovation of the 21st century. In a {heuristic} way, it is a way to make a computer have something that resembles a human brain, and this means that AI, just like the steam engine, will lead humanity to a new frontier of innovations, letting people make things that they never before could. In other words, AI is a modern industrial revolution.

Despite the vast promises that proponents of AI like to make, AI has the capacity to be as much of a danger as a tool. For instance, AI can be used to create superhuman weapons in time of war, it can be used to create software that promotes racist or sexist stereotypes, and can be a huge disturbance to the job market. The dangers of AI are so

varied because AI itself has an ability to be inherently general, because it essentially tries to replicate the way that the human brain works.

Of the many issues that AI can bring, the Group of 20 (or, as is its common name, the G20) is mainly concerned with AI's entry into the labor force. The G20 is an organization which is responsible for finding consensus among its members on issues that impact the economy; the G20 is fundamentally a financial forum. For AI, this means that the G20's role—and by extension, what this study guide covers—is to find solutions for the economic issues that AI and other emerging technologies might bring upon the global economy.

Definitions of Key Terms

Artificial Intelligence (AI)

The term Artificial Intelligence (AI) is an umbrella term that covers all machines that imitate, to some extent, the abilities and/or thought process of a human or an otherwise rational actor.¹

Large Language Model (LLM)

Large Language Models (LLMs) are a category of AI models that are trained on a large amount of material (thus the adjective "large") and are designed for tasks relating to language processing.²

Artificially Intelligent Agent (AI Agent)

Al agents refer to Al models that act autonomously, have a specific task, and react to changes. This means that an Al agent can act entirely without human interaction.³

¹ Russel and Norvig. Artificial Intelligence: A Modern Approach. pp. 1-2.

² Wikipedia Editors. *Large language model*. English Language Wikipedia.

https://en.wikipedia.org/wiki/Large_language_model

³ Sapkota et al. *Al Agents vs. Agentic Al: A Conceptual Taxonomy, Applications and Challenges*. https://arxiv.org/pdf/2505.10468

Background Information

Technical Information

Artificial Intelligence (AI) is a very broad term. It covers any human-made device (aka, every machine) that can, in some way or another, imitate the behavior or the thought process of a human or otherwise rational actor.⁴ Basically, this means that the word AI covers every piece of technology that imitates human thinking, to any extent. This means that even things like calculators or (with some generosity) clocks could be considered as AI.

However, this wide definition usually is not what most people assume when they hear the phrase "AI" in the modern world. The modern, ask-someone-off-the-street definition of AI is one that only contains the more advanced technologies, like chatbots or image generators. Regardless, thinking of AI in the context of the wider definition is still useful.

There also exist other definitions for artificial intelligence that place more of a focus on the "intelligence" aspect of "artificial intelligence." One such definition is the one proposed by Alan Turing in 1950. This definition is more commonly referred to using the name of the test that it uses, the Turing test. The Turing test outlines a process that allows one to determine whether a machine is intelligent or not. According to the Turing test, a machine passes the bar of "being intelligent" when it is able to consistently persuade a human interrogator that it is also a human, through answering the interrogator's questions in writing. Modern-day chatbots (for instance, ChatGPT 4.5) have passed the Turing test.

Types of Artificial Intelligence

AI, since it is a general term, can come in many forms. One of these forms is the Neural Network (NN). NNs are one of the oldest and most straightforward forms of modern AI.

⁴ Russel and Norvig. Artificial Intelligence: A Modern Approach. pp. 1-2.

⁵ Turing, Alan. COMPUTING MACHINERY AND INTELLIGENCE. Mind, vol. 49, pp. 433–460.

⁶ Bridson, Benjamin. *Al and the Turing test: Where are we headed?* ie University.

https://www.ie.edu/uncover-ie/has-ai-passed-the-turing-test-science-technology/>.

For instance, the 1958 Mark I Perceptron, which is sometimes considered one of the predecessors of modern AI tools, was a NN. The NN AI architecture continues to exist in one way or another in almost every AI tool of today: many parts of chatbots or image generators work using NNs.

From a technical perspective, NNs owe their name to their internal structure, which is a web of "neurons" which simulate the human brain's ability to think. Using these neurons, NNs can process data, like images or text, and generate output. However, for this process to work, NNs need to derive the connections between their neurons. Typically, this is done through a process called "training," which this guide will expand on more later. Also, this training process is capable of emulating any problem-solving skill, from recognizing objects inside an image to generating its own text.

A second category of AI is generative AI (sometimes called GenAI). Generative AI is a type of AI where the AI model (which is usually composed of NNs) is trained to learn the underlying patterns and structures of a type of data, and then the AI is tasked with replicating that type of data. This process is what gives the term generative AI its name; it generates new material. The category of generative AI is one that contains the majority of well-known uses of AI. Chatbots like ChatGPT or Gemini, and image and video generators like Midjourney are characteristic examples of generative AI.

A third, more specific type of AI is the Generative Pre-trained Transformer (GPT). Despite the scary name, this is probably one of the most well-known architectures of AI, because it is in the name of the most popular chatbot in the world; ChatGPT.⁷ To understand a bit about GPTs, we can go through their name, word by word. Firstly, the word "generative" just means that the model is a type of generative AI, meaning that it generates new content. Then, the word "pre-trained" simply means that GPTs are trained from before-hand, the user just interacts with an already-trained model. Lastly, the word transformer refers to the underlying architecture, the transformer, which is basically a NN with some extra steps (which are irrelevant for the scope of this guide). The important part is that GPTs, because they are transformers, are specialized to deal with natural language (which is why sometimes we put them in the category of Large Language Models, LLMs).

Lastly, there are cases for some more specialized technologies, like for image generation, or sometimes for industrial settings. These specialized technologies, in the majority of cases, use NNs combined with some other, more specific tool.

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⁷ Singh, Shubham. *ChatGPT Statistics (2025) – Daily & Monthly Active Users*. Demand Sage. https://www.demandsage.com/chatgpt-statistics/

Modern Artificial Intelligence

In order to understand how AI can be harmful and how to regulate it, it is important to first have an understanding of how modern-day AI is created.

All modern Al development processes occur in a somewhat standardized way. Firstly, a problem to solve is selected (sometimes called "the task") and an appropriate architecture is chosen to solve this problem. Then, the developers find training data which shows their problem being successfully solved. This training data is then fed to the model, and then using a chosen training method, the model learns to simulate the training data.

This process is complicated to visualize, so it will be illustrated with an example. Imagine that a developer's task to solve is recognizing written digits. In other words, the goal is that when the AI is given the number "1" written on a piece of paper, it can recognize this number. The first step in order to make this will be to choose an architecture for the AI model, and in this case, the developer chooses a plain NN. Then, in order to give the AI model material to understand what each number looks like, the developer has to find some examples of images with numbers, each tagged with the number they contain. Lastly, the developer uses a training method (which is outside the scope of this guide) to use the pictures of numbers to get the AI to recognize pictures of numbers.

A key takeaway from this process is that the way AI works is entirely based on its training data. In the example with the numbers, if all the training data shows the number "7" written with a line ("7"), then when shown a "7" without a line, the AI model might mistake it for a "1," simply because its data was biased. This same concept of biased data can be extended to other types of models. For instance LLMs like ChatGPT can have racist responses if all of their training data is biased to be racist, just like children who grow up in racist families will tend to be racist.

Artificial Intelligence and the Industry

Up until the AI boom of the 2020s, computers could only do what their programmers explicitly programmed them to do. This meant that if there were a task that was difficult to describe algorithmically (like responding to a query using natural language or being able to see objects in an image), it would be practically impossible to program a computer to solve it consistently. Therefore, for industrial settings where there are

certain tasks that are unwieldy in a way that traditionally programmed computers cannot solve them, there is a need for people to manage the machines.

However, the emerging trend is that the tasks that computers could not perform are now able to be done by Al tools instead. The reason why this is possible is that in order to train Al, there is no need to manually understand the problem. Instead, the Al model can be left on its own to train itself, without explaining how it thinks. This phenomenon of Al models having hidden inner workings is summarized with the term "black-box models." Black-box Al models have that name because they work like a black box, where some input data is given, it passes through a black box, and magically, the input data is transformed into the output data.

One of the most important results of Al's connection with the industry is that using Al's capacity to mimic the human brain in order to solve problems, Al can now fully automate entire industries, assuming a large enough scale. This means that all the human supervisory roles like operators or floor managers are no longer needed, because machines can operate themselves by emulating the brains of their operators. In essence, Al technology is going to reach the point where all labor is going to be fully automated.

Artificial Intelligence in the Future

The Categories of Artificial Intelligence

Al can be categorized based on the variety and skillfulness of its abilities. Generally, there are three categories where an Al model can fall. Firstly, there is Artificial Narrow Intelligence (ANI), where an Al model can only perform a pre-specified range of skills (like the number recognizer example). Probably all of today's Al still falls in the ANI category. Then, there is Artificial General Intelligence (AGI), where an Al model can perform any type of skill. A human-level Al model would fall in this category. Lastly, there is the concept of Artificial Super Intelligence (ASI), which describes the concept of an Al model that surpasses the capacities of humans in all fields, including logic, creativity, and even emotional understanding. It is important to note that although reaching AGI may be conceivable, ASI is more of a science fiction concept.

Artificially Intelligent Agents

Al agents are a type of Al that focuses on doing tasks autonomously. Generally speaking, Al agents are a type of Al model that does not require a human to ask it to do something. This might include an Al model that trades on the stock market; because the Al model can act autonomously (there is no one that has to verify its trades), it is considered an Al agent.⁸

Another key characteristic for AI agents is that they are reactive. Essentially, AI agents are automatically given input, and if something happens to that input, they automatically react. This contrasts non-agents, because a non-agent like ChatGPT would need a human to manually prompt it to respond, thus making it non-responsive. For the stock trading example, the stock trading model is reactive because it does not have to wait until a human manually gives it new stock information and manually re-runs it. It can re-run itself automatically, thus making it reactive to new updates.⁹

Other Innovations

To understand the rest of the innovations that AI might see, it is useful to categorize these innovations into two general categories: innovations in how AI is used and innovations in the type of AI that is used. The former is more predictable; new uses for AI will be found in more and more branches of the industry, until every branch reaches saturation. The latter category of innovations include AI architectures or models that have not yet been conceived, meaning that they are entirely new.

Economic Impacts

Generally speaking, most modern Western economies follow a system that enshrines the principle of profit maximization. This means that as a company, the goal is to maximize profit in any way possible. In theory, this means that if there is an even slightly inefficient procedure in a company's functions, that company would be incentivized to reorganize or remove this procedure until it has reached a theoretical maximum productivity.

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⁸ Sapkota et al. *Al Agents vs. Agentic Al: A Conceptual Taxonomy, Applications and Challenges.* https://arxiv.org/pdf/2505.10468

⁹ Ibid.

Companies have many reasons to follow this principle. If companies are profitable, they will attract more investors who want a piece of that profit, thus giving the company more investments which allow it to further develop. Additionally, in profitable companies, each individual member of the company (and in particular the executives) have personal incentives to increase the company's profit; if the company makes more money, so will they. Lastly, companies with more profit are more flexible and resistant. If something happens and the company is in need of money, a profitable company will be much more likely to survive, simply because they have more money at hand. Therefore, any company practically needs to pursue profit maximization.

Maximizing profit as an ultimate goal is very likely to lead to AI being preferred to human workers, simply because human workers are more expensive. For example, a human worker needs to be paid enough to eat, find housing, and maybe even support a family. Also, human workers need to be treated up to certain labor standards, like being offered paid time off or being given health insurance. All that if human workers get replaced by an AI worker, these costs get replaced by the cost of the AI software and electricity. This means that unless governments intervene, workers will be severely impacted.

Unemployment

Al can easily phase out employers in every sector, but it is the most effective at doing so with administrative and office work. This replacement of employees could happen from the top down, where the management of a company chooses to specifically remove employees and entirely replace them with Al alternatives, or it could happen more passively, where existing workers use Al to become more efficient, and as a result, the company needs fewer workers.

In either one of the above scenarios, there is an important question: will these workers be reemployed? This question is heavily debated in the relevant literature. Some claim that workers will be reemployed because AI will create more jobs than it destroys, while others say that it will not, and AI will be taking jobs that will have no way to be reestablished.

The proponents of the idea that AI will create more (or the same amount of) jobs than it destroys claim that the entry of AI into the workforce will have similar impacts as the industrial revolution had. In the industrial revolution, workers that worked in agriculture and artisans quickly found new places of employment in industry, because despite the

fact that those machines were more efficient (similarly to AI), humanity's needs changed, and now humanity has new needs, which more employees can fill.

However, this analogy with the industrial revolution might have some limits. Some will say that because of the nature of AI (or the nature of AGI, when technology gets there), when humanity's needs change, those new jobs will also be able to be done using AI, because AI can theoretically replicate any human brain. However, there still exists the possibility that readers are biased to think that humanity will never be able to adapt because it is very difficult to imagine what a job that AI would never be able to do would be.¹⁰

Complete Automation

It is possible that at some point in the future AI will automate all human labor. In fact, surveys on experts have projected this to be in the early 22nd century, and these keep on getting closer as AI gets more advanced.¹¹ It is useful, for the sake of establishing a stance for AI, to examine this future situation where every human job can be done by AI.

For this future, there exist two cases: the "utopian" and the "dystopian". In the utopian scenario, the now unemployed working class will have to somehow claim certain rights that they would need to survive. For instance, if workers are unemployed and as a result they cannot buy food or find housing, they could demand from the government either these commodities directly (aka. the government gives people food and clothing) or they could demand money from the government in order to buy the goods necessary for sustenance. This scheme where the government offers people money for sustenance is called Universal Basic Income (UBI), and typically, the money to fund UBI comes from increased taxation on major corporations.

The dystopian alternative is much more grim. In this scenario, the working class will try to claim their rights from the government, but for one reason or another, the working class will fail to do so. As a result, the world will see working class populations falling,

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¹⁰ Campa, Riccardo. *Three Scenarios of the Future of Work: Technological Unemployment, Compensation, Hollowing Out.* SOCIOLOGÍA Y TECNOCIENCIA, vol. 9.2, pp. 140–154. Ediciones Universidad Valladolid.

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¹¹ 2023 Expert Survey on Progress in Al. Al Impact Wiki.

https://wiki.aiimpacts.org/ai_timelines/predictions_of_human-

level_ai_timelines/ai_timeline_surveys/2023_expert_survey_on_progress_in_ai>

because they cannot find sustenance, while the company owners will have no reliance on these workers, and thus no incentive to help them. However, in either of these alternatives, it is likely that violence will be seen in the process of the working class attempting to claim its rights to food, housing, and life.

Monopolies

The AI market is very susceptible to monopolies, and already we see companies like OpenAI having over 80% of the generative AI market share with ChatGPT. The AI market has a very high barrier to entry; creating a competitive chatbot that isn't reliant on some other existing chatbot is a process that requires a large amount of funding, technical expertise, physical computing power, and time. For this reason, regulating the AI market is a danger for smaller competitors, because they will have to jump through more hurdles than previously, like passing safety certifications.

Timeline of Events

Date	Event
1958	The Mark I Perceptron is created by F. Rosenblatt. ¹³
2017	Engineers at Google propose the transformer architecture, which would revolutionize Al's ability to generate text. ¹⁴
2020s	The Al boom, Al has begun to become a major part of everyday life.
November 2022	ChatGPT 3 is released, marking the introduction of AI chatbots into mainstream use. ¹⁵
September 2024	Framework Convention on Artificial Intelligence.

¹² Singh, Shubham. *ChatGPT Statistics (2025) – Daily & Monthly Active Users*. Demand Sage. https://www.demandsage.com/chatgpt-statistics/>

¹³ Rosenblatt, F. *The perceptron: A probabilistic model for information storage and organization in the brain.* Psychological Review, vol. 65(6), pp. 386–408. https://doi.org/10.1037/h0042519>

¹⁴ Vashwani et al. *Attention is All you Need*. Conference on Neural Information Processing Systems, 31st ed. https://proceedings.neurips.cc/paper/2017/file/3f5ee243547dee91fbd053c1c4a845aa-Paper.pdf

¹⁵ Roumeliotis and Tselikas. *ChatGPT and Open-Al Models: A Preliminary Review*. Future Internet, vol. 15(6), p. 192. https://doi.org/10.3390/fi15060192

January 2025	"Removing Barriers" Executive Order in the USA.
February 2025	ChatGPT 4.5 is released, successfully passing the Turing test. 16
July 2025	EU AI Act.
2048	Projected attainment of AGI. ¹⁷
2110	Projected capacity to fully automate all labor. 18

Stakeholders (Major Countries and Organizations)

The United States of America (USA)

The USA is arguably the largest contributor to Al development, both from an academic perspective (the USA has some of the world's most important academic institutions in the field) and from a development perspective (most major Al companies are US-based). This American dominance in the field is reinforced by the US government's very lenient policies on Al. In fact, Al is regulated exactly like any other product, with no additional or specialized rules.

The People's Republic of China (PRC)

The PRC is a second country with major development and research power in the field of AI. Quickly industrializing, the PRC is one of the most important stakeholders to look out for in regards to AI. Additionally, the Chinese manufacturing industry is a major exporter for goods that are required in the development of AI around the world.

¹⁶ Bridson, Benjamin. *AI and the Turing test: Where are we headed?* ie University. https://www.ie.edu/uncover-ie/has-ai-passed-the-turing-test-science-technology/.

¹⁷ 2023 Expert Survey on Progress in Al. Al Impact Wiki.

https://wiki.aiimpacts.org/ai timelines/predictions of human-

level_ai_timelines/ai_timeline_surveys/2023_expert_survey_on_progress_in_ai>

¹⁸ Ibid.

Taiwan

Taiwan has a very significant role in the development of AI, since it is home to the Taiwan Semiconductor Manufacturing Company (TSMC), which is the largest manufacturer of semiconductors, which are a necessary component for other hardware, like GPUs, which are used in training and running AI models.¹⁹

Nvidia

Nvidia, despite being a company, has so much power over the GPU market and thus the AI market that it should nonetheless be considered a major stakeholder. Specifically, in the GPU market, Nvidia has a 92% market share, virtually being the only choice for AI developers.²⁰ This dominant position in the AI market has led Nvidia to become—at the time of writing this—the largest company in the world by market cap.²¹

The European Union (EU)

The European Union, although having a role in the development of AI technology, has a more significant role in the regulation of this technology, having landmark policies like the AI Act that is discussed in the next section.

Previous Attempts to Solve the Issue

EU AI Act

The EU AI Act is a landmark policy passed in the European Union in July of 2024. It outlines various regulations that must be followed for the safe usage of AI. Also, one of the most significant characteristics of the EU AI Act is that it separates AI based on risk.

¹⁹ Koski, Ryan. *Nvidia GPU*. Design Life-cycle. http://www.designlife-cycle.com/nvidia-gpu

²⁰ Roach, Jacob. *Despite criticisms, Nvidia dominates the GPU market now more than ever.* XDA Developers. https://www.xda-developers.com/despite-criticisms-nvidia-dominates-the-gpu-market-now-more-than-ever/

²¹ Largest Companies by Market Cap. Companies Market Cap. https://companiesmarketcap.com/

In other words, the AI Act poses more actions and regulations for "riskier" AI ventures, and vice versa. This is a very important tool to protect smaller AI companies and to not increase barriers of entry. At the time of writing this guide, there is not enough information to be able to determine whether or not it has been successful, but the history of EU regulations suggests that it may be.²²

USA "Removing barriers" Executive Order (EO 14179)

The USA's stance for establishing regulation on AI is summarized in this executive order published by Donald Trump in January of 2025. The USA's policy is summarized in the following quote: "It is the policy of the United States to sustain and enhance America's global AI dominance in order to promote human flourishing, economic competitiveness, and national security." Essentially, this is a laissez-faire AI policy, where the government lets companies do pretty much anything they choose.²³

So far, it seems that this policy has had positive effects on investments and development of AI technologies, leading the US to dominate the international market, while having adverse effects on safety and privacy.

Framework Convention on Artificial Intelligence

The Framework Convention on Artificial Intelligence is an international treaty signed by various countries and organizations such as the EU, the US, the UK, and Japan (but not the PRC). Its contents are an affirmation of the fact that AI policy should protect human rights and democratic values from AI misuse. In terms of utility, this convention, despite being legally binding, is just an international treaty, meaning that it has no mechanisms to hold countries accountable.²⁴

²² Al Act. European Commission. https://digital-strategy.ec.europa.eu/en/policies/regulatory-framework-ai#ecl-inpage-a-risk-based-approach

²³ Removing Barriers to American Leadership in Artificial Intelligence. The White House.

https://www.whitehouse.gov/presidential-actions/2025/01/removing-barriers-to-american-leadership-in-artificial-intelligence/. Archived at

https://www.whitehouse.gov/presidential-actions/2025/01/removing-barriers-to-american-leadership-in-artificial-intelligence/

²⁴ The Framework Convention on Artificial Intelligence. The Council of Europe.

https://www.coe.int/en/web/artificial-intelligence/the-framework-convention-on-artificial-intelligence

Possible Solutions

Company-based Employee Compensation

This possible solution outlines a scheme where if an employee becomes unemployed due to AI taking their position, their former employer still owes them some compensation. This has, as a result, companies being disincentivized to minimize their human workers in place of AI, because they would not want to have to pay the additional cost incurred by firing a worker. However, this would have several enforcement challenges, mainly due to the difficulty of quantifying the notion of replacement. Additionally, being an artificial limitation, this policy could significantly hurt productivity.

State-based Employee Compensation

This solution involves a similar mechanism with the previous possible solution, with the only difference being that instead of companies paying for employee compensation, that compensation is paid by the state, which funds the compensation from taxes on corporate profits. This solution could range in how compensation works, and could reach a universal scheme where everyone gets paid regardless of whether or not their employment has been lost to AI.

Limiting AI Agents

Currently, most companies have the capacity to replace certain responsibilities with entirely autonomous Al agents. This is a significant danger to employment, and could be somewhat mitigated by creating limitations on the degree of autonomy that Al agents have. For instance, Al agents could be required to be supervised by a human expert.

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