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Research report

Forum: Economic and Social Council
Issue: Contesting The Economic Effects Of Artificial
Intelligence On Global Unemployment Rates
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Position: Presidency



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Introduction

Since the industrial revolution, artificial intelligence (AI) has been taking over the world's job market. AI and machines are a lot faster and more efficient than human labour. They also have a much smaller margin for error and can ensure that the product quality is to a high standard. An investment many corporations make in AI and technology is usually much more dependable. Due to the rising availability of AI and technology, many companies have reduced the number of employees they have hired as machines are, in the long run, cheaper and more reliable. Since the rise of machines for production in the industrial revolution, the global unemployment rate has grown by 4%, and an average of 6.3-6.5% of the labour force (over 511 million people) was unemployed in 2021. Depression years in the 1820s, late 1830s, late 1850s, and most notably, the Great Depression, had unemployment rates which surged to over 20%.

According to Pew Research, nearly half of the experts polled (48%) believe robots and digital agents will dispense with a significant number of blue- and white-collar jobs. Their concern is that this will exacerbate income inequality and result in a mass of virtually unemployed people. The other half of the respondents (52%) believe that robotics and AI will create more jobs than they will eliminate. While the latter half believes that AI will eventually replace humans, these experts believe that human ingenuity will lead to the creation of new jobs, industries, and ways of earning a living, much like it did at the dawn of the Industrial Revolution.

There are many causes of unemployment, and in recent years, a lot of it has to do with automation and AI robots replacing people. Robots are, as aforementioned, a lot more dependable and therefore replace manual labour performed by humans. The people who get laid off because of this can reskill into another field, although this risks having to reskill again. The biggest threat to current-day manual labour is the notion that eventually robots and machinery will replace such workers. The reason for this is that robots can replace staff and labour and even be faster and, in many ways, better. The things that robots cannot replace are the human mind and a creative thinking process. Robots cannot gauge emotions or any other human "flaws," such as temptation, desires, etc. AI (so far) cannot replace human innovation, such as the arts. This is also changing, though, as AI in music and visual art is a growing phenomenon. Even jobs such as drivers and chauffeurs are slowly dissolving as more autonomous robots and vehicles are developed.

This report will cover a wide range of AI-related topics, like its history, the media and its influence, and, of course, AI and its economic effects on unemployment. To successfully prevent the exacerbation of this issue, it is important to note that the debate and controversy surrounding AI have been long-standing, since before it was even invented. The theory of humans being able to create something more intelligent than their creators has fascinated scientists and computer specialists for nearly a century. At the same time, it frightens some other people when others choose to rely on it.

Definitions of Key Terms

Absolute Vs. Relative Poverty

When GDP is the 50th percentile, anyone earning below the 20th percentile and unable to afford basic needs (food, clothing, shelter) is living in absolute poverty. Relative poverty is defined as anyone living below the 50th percentile of wages and household income. Those living in relative poverty can usually afford minimum rent and necessities, although they struggle to meet ends or pay for other things such as transportation.

Artificial Intelligence (AI)

is the specific term for all technology that is capable of performing holistic tasks. AI is usually in the form of a robot, which can sometimes speak and listen. Some AI has even developed so much that it can identify objects and sounds. For technology to be classed as intelligent, it must be able to make decisions rather than follow a set loop of code and instructions. It can gauge situations and calculate outcomes, and use that to act towards the best possible solution.

Autonomous

When related to technology, it is programmed to make its own decisions and judgements in a situation. Autonomous technology is a branch of AI that performs more robotic tasks without any guidance. Autonomous technology is not artificial emotional intelligence. They follow an algorithm which tells them how to react to a set of variables. They replace human judgement, such as chauffeurs and driving vehicles on roads with other parties such as pedestrians, cyclists, etc. Autonomous can sometimes refer to politics and political and government systems¹.

Economic depression

An economic depression is when the economy comes to a standstill. The economy works in a circular flow when consumers buy goods and services from businesses, corporations, and organisations, which can provide jobs to citizens. With jobs, citizens have the financial ability to consume goods and services. When this chain is broken by unemployment (due to AI), the economy can crash as there is less or no money flowing through the economy. Consumer behaviour is, therefore, the critical player in the economy—if there are not enough consumers, everything eventually loops back. A notable depression was the great depression of the 1950s, soon after the Second World War.

GDP (per capita)ⁱ

The average income of the average citizen of a country. This is calculated by including those who are unemployed and any other citizens in the labour force. GDP (per capita) is often the statistic that is used when classifying different countries in terms of wealth. The average

¹ E.g., HKSAR which is an abbreviation for Hong Kong Special Administrative Region, where, as a SAR, they are somewhat autonomous in their government system (N.B due to this being an ongoing conflict this may evolve)

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GDP per capita changes drastically when the masses are left jobless, which, in recent years, has been due to automation.

GNPⁱⁱ

The total value of all the goods and services produced by a country during a year or any other specified time period. GNP is very close to GDP per capita. Whilst GNP deals with production value, GDP per capita pertains to the average income of every citizen of the country. They are both crucial in measuring the success of a country's economy.

Intellectual Property (IP)

A person's unique intellectual ability to perform any kind of holistic task such as consulting, music-making or producing, cooking, innovation, creativity, design, etc. This is usually what makes a person's unique selling point (USP) when hired or during a selection process.

Labour force

The labour force (sometimes referred to as the workforce) is the total number of people in an economy who are actively engaged in work or who are actively seeking employment. The participation rate of the labour force is the labour force as a percentage of the working-age population. When it comes to the participation rate, many male-dominated sectors such as mining and manufacturing have been shrinking, particularly in many developed countries, and female participation rates are on the rise.

LEDCs

Less economically developed countries—they are usually recognised with low GDP (per capita), high birth rates due to a lack of contraception and education, as well as a low age of marriage. They often have high death rates due to a lack of healthcare, education, or poor hygiene. Other characteristics include shorter life expectancies (due to the high death rates) and a large proportion of employment in the primary sector, e.g., cacao farming, factory labour, etc.

MEDCs

More economically developed countries. These countries are also known as first-world countries. In general, their GDP (per capita) is in the higher percentile. They have lowered poverty rates and given longer life expectancies. Oftentimes, they are heads of innovation and development and are hubs for big corporations. A larger proportion of their employment is in the secondary and tertiary sectors, such as manufacturing and consulting.

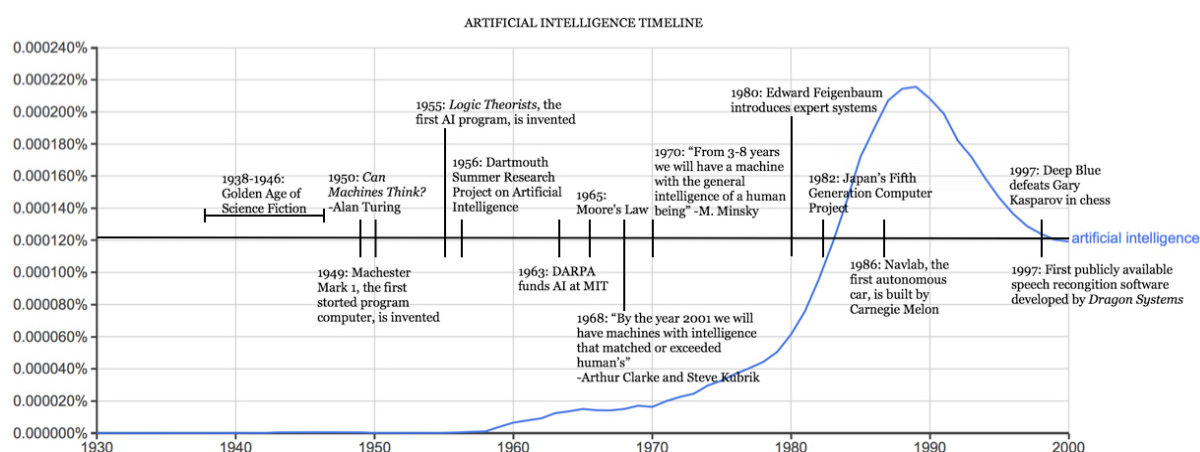
Unemployment

The total number of people in a country who are actively seeking employment, and are a section of the labour force. This excludes stay-at-home parents or partners, those who have an impairment which prevents them from working, and people who are not in the working-age population and are looking for work.

Background Information

AI was first developed In 1951, when programmers at Oxford University created a computer program. Within a year, the program could play an online game at an impressive pace. AI has since developed and integrated into society, where we use it to edit photos, create music, and art, and even write essays, reports, or articles. AI has grown exponentially in the last 80 years, and today, semi-autonomous cars are already on the market, with fully autonomous vehicles in development. The notion that AI is by default “safe” has been challenged by many influential sources, particularly in the media. Whilst AI can be programmed to cause lower averages of damage than when compared to humans' work, when AI goes wrong, it can be disastrous.

“The History of Artificial Intelligence”, Harvard University



The timeline of AI continues to grow exponentially as more and more developers consistently build on prior developments to create completely new systems and programs. Thus far, AI has not been able to fully replace humans, as supervision is often mandated in factories and other sectors using automation. Although AI opens a lot of jobs and employment options in the technology industry, there is a lot of background knowledge and understanding required for them. To program, one must be well versed in mathematics and should be able to pay great attention to detail. Whilst these jobs are in high demand and pay well, it is harder to find people that are skilled in technology. The other reason that these jobs pay so well is that not a lot of people can work them. If more people were to be skilled in AI, the value and the salary for these jobs would decrease, making employment skewed once more.

Unemployment due to AI is a major uncertainty for many people in highly populated MEDCs, such as the United States. Around 37% of employed workers in the US are susceptible to unemployment due to automation and AI replacement. This can lead to an economic depression with alarming rates of unemployment and a nosedive in GDP (per capita). AI has the capacity to fulfil a large number of jobs that humans currently do. This could be a threat to many economies as it would result in mass unemployment.

General overview

The Economy And Its Effects On Unemployment To Do With AI

How The Economy Works

The first thing to note is that the economy is one big circular flow. Resources and other primary and secondary businesses provide resources to secondary and tertiary businesses, respectively. Those businesses then turn them into products and sell them on the product market. From there, households buy the services and Similarly to resources and other products, money flows through the economy, but in the other direction.

As resource markets provide to businesses, they receive money in costs. Businesses make revenue from the product market when they sell goods and services, and when households purchase from the product market, the market gets consumption expenditures. The way that households gain an income is through salaries, which come from the capital, enterprise, land, or labour that they provide the resource market with. This is the basic concept of the economy, which when disrupted can lead to a standstill and, possibly, depression.

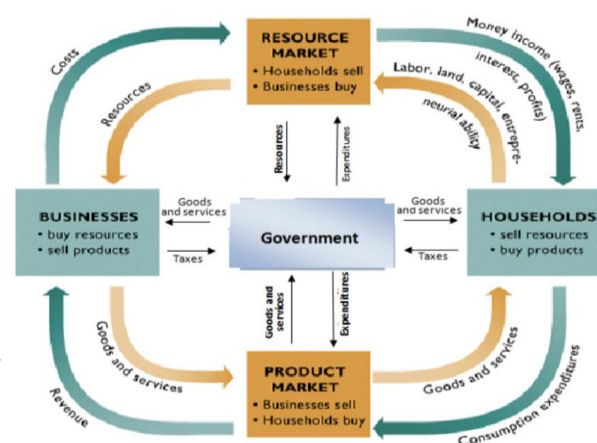
The Loopback with Unemployment

In this chart, AI replaces capital, enterprise, land, or labour, which comes from households. Households thereby earn less or no salary and income. When this happens, they are unable to buy from the product market, and so on and so forth. Every element of the circular economy is crucial to the running of a country's economy. When jobs are lost due to automation and AI, this chain is broken and the economy fails to run. This is roughly what happened during the great depression, when consumers and households stopped spending money in the product market.

These increasing unemployment rates due to AI replacing humans hit the economy quite hard as it reduces each economy's gross domestic product (GDP) per capita. This means that the economy is less productive and the average income of citizens is lower. This has a loopback to the government, as lower income generally results in lower taxes. Implications of this can include the quality of infrastructure, the availability of public healthcare facilities, and educational facilities. This directly affects the quality of living in a country and can encourage wealthier people to move to another country with a higher standard of living. This further reduces the GNP of the country. So on and so forth. Unemployment plays a very large factor

*“Circular
Flow
Economy”
Oxford
University
Press*

provide capital, enterprise, land, and labour to the resource market.

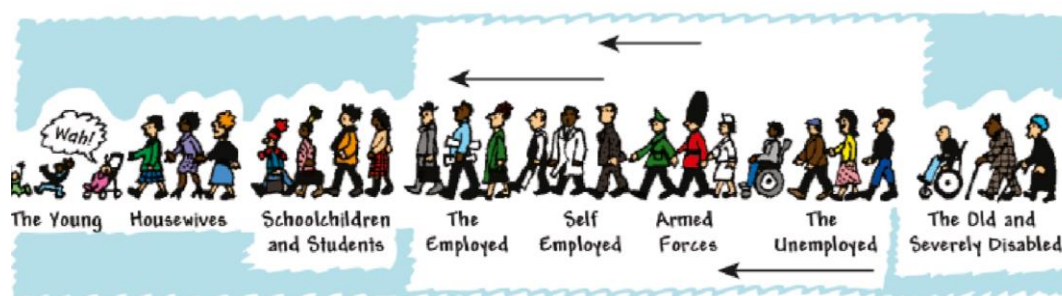


in the general wealth of a country since every citizen contributes to the economy and its success.

On the other hand, AI and developing such programs have a huge economic benefit. It puts the economy into faster and more efficient production, which can increase imports and exports. Automation in ports, such as the Rotterdam Port, replaces human labour since it is a lot faster. The strengths of AI are working from a formula, so when deciding on efficiency and puzzling, AI surpasses the human brain. AI is mostly superior to human effort when it comes to tasks that require logic, mathematics, or a specific set of rules. Contrary to that, robots cannot replace any holistic tasks- whilst AI can. AI is being programmed to also gauge things like human emotions and other factors in order to effectively produce a product. Autonomous vehicles are a prime example of thisⁱⁱⁱ. So far, AI is the cause of a general 50-70% decrease in wages for American workers. AI has also taken an estimated 60 million jobs in the US alone.

Lifecycle of Employment

The lifecycle of employment is the general process that the average citizen goes through when it comes to work. Generally, the working age starts at 18 and ends at 65. Those who are 16-17 are usually students by occupation and therefore are not factored into the working age population. Those actively working or looking for work are called the labour force, and those who are unemployed are in the labour force who are not working. Those of working age who willingly don't work are usually schoolchildren, housewives, and the disabled. In some countries, people with certain impairments—in contrast, robots cannot replace any holistic tasks, whereas AI can— such as those with cerebral palsy or other debilitating conditions, are not classed as unemployed when they do not have work. Some countries even prevent people with such disabilities from entering the labour force as a whole.



“Lifecycle of Employment”, Oxford University Press

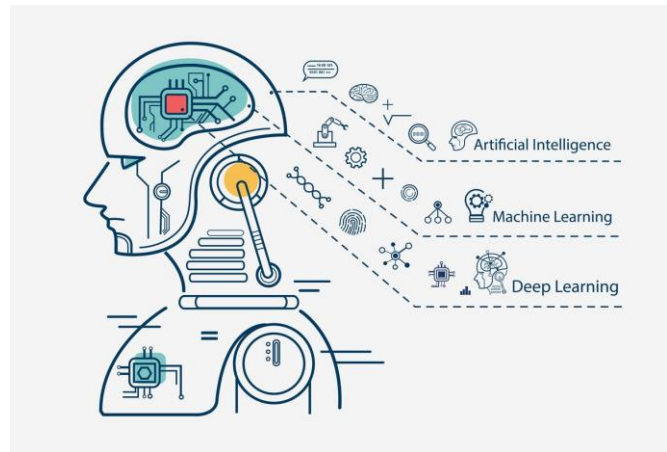
AI vs. Robots

It is important to note the differences between AI and robots (along with other types of technology). AI specifically refers to technology that can make *human decisions* and is programmed to do so. Unlike general robots and other technology, they are programmed to follow a specific code of actions regardless of other variables, such as safety factors. AI can produce more holistic products that depend a lot more on human thought processes and

rationality. They can distinguish between aesthetically pleasing and non- aesthetically pleasing. Similarly, they can distinguish between pleasant and unpleasant audio

Since the industrial revolution and even before, robots and other machinery have been replacing people. The most simple machines have replaced humans for many millennia, even if they do not have any economic or employment implications. Robots have replaced jobs such as the ones at the Rotterdam Port, where they load and unload major cargo ships and containers—tasks that would take a phenomenal amount of manpower. Artificial intelligence does other jobs like producing music, art, writing, poetry, etc.

“AI and robotics”, Forbes, Shutterstock



Artificial intelligence has been developed to perform just as a human with emotion would. This is known as artificial emotional intelligence. Such AI would be able to feel and sense emotions. Should AI advance to be able to distinguish between emotions and take certain actions in accordance with the emotions, they would also be able to do jobs which require psychology, sales, marketing, etc.

The Business Appeal of AI

AI is an investment that has a guarantee of performance, which is far more certain than humans. Robots usually give 5–15-year guaranteed performance, which is usually more efficient than humans. When businesses invest in AI rather than employees, it is, in the long term, a cheaper option. Because AI and robots don't require a salary, it is cheaper for businesses. They can also contribute to higher revenues. The costs that come with AI and robots include maintenance, electricity, and power. Unlike humans, they don't have maternity, paternity, or sick leave. AI also doesn't take any holidays, which adds to its maximisation of productivity.

AI is appealing to businesses but also to economies as a whole, as it can maximise GNP. AI, however, does little for the GDP (per capita) of any given country and economy. AI in itself is an entire industry and is therefore capable of providing just as many jobs as it replaces. This is a controversial notion among politicians and economists.

Media Influence & Depictions

Humans have had theories and ideas about AI overtaking jobs, and at some times, even the world, for over half a century. Isaac Asimov's “I, Robot” from 1950 is one of the first storylines ever to depict AI and robots as possibly harmful to humans. Other subplots of the book and the adapted film version from 2004 have to do with robots having their own minds, feelings,

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emotions, and complete control over themselves-regardless of their “creator’s” programming. Many people have since speculated about the safety of technology and AI in everyday life. More and more storylines and movies were released in the following years, such as “A Space Odyssey”, which included a deadly and mal-intended computer, “HAL 9000”. There’s also Battlestar Galactica in 1978, “The Terminator” from 1984, and the world-famous “Star Trek: The Next Generation.” The most noteworthy of all these, however, is Star Wars, which was first released on 15 December 1977, eight months after the comic.

Ideas to do with AI and technology as a danger to society have, as mentioned, been discussed ever since AI was first developed, in 1951, by a group of programmers at Oxford. It developed so fast that by mid-1952, the program could play a game of checkers at a decent speed. But long before that, concepts of artificial intelligence have been explored, especially from 1938- to 1946, which is sometimes referred to as the "golden age of sci-fi". Pop culture and media attention, which were brought to sci-fi and "futuristic," were big players regarding the public’s views on technology. Some loved it, whilst others feared the stories would play out in real life.

MEDCs and LEDCs with AI

MEDCs tend to have more access to AI and automation than LEDCs due to their GDP. They are therefore more rich and affluent, and because of the benefits that AI can have on an economy, their GNP also grows. International trade is dominated by developed nations, which are able to control world prices for natural resources exported from less-developed economies. The GNPs and GDPs of MEDCs are a lot higher, which makes the expensive AI more available to corporations based there. This is why AI replacing humans is, as of now, a bigger problem in MEDCs than in LEDCs. Unemployment in general, however, is an issue which is tackled in most economies of the world.

Over-dependence on subsistence farming is a common phenomenon in LEDCs in order to provide jobs and income. This is why many LEDCs have a lot of employment in the primary sector. Lack of capital to invest in modern infrastructure to support businesses and communities is part of the circular economy, along with insufficient investment in education and health care. Other factors are the low-skilled and poorly educated workforces in LEDCs. The low level of effective consumer demand is another byproduct of the circular economy being slow. Rapid population growth, famines, wars, corruption, etc. mean that the availability of jobs is less than there are people in the labour force.

The Future of AI in Employment

Judging by the last 20–40 years, AI is only going to make bigger and more impactful debuts in the job market. There are two possibilities for the usage of AI in businesses. Either AI is employed by companies to replace workers, thereby reducing labour costs, which is a more likely scenario, or AI will be adopted by workers to do their jobs for them. These workers will still get paid, but instead of having to put in their own manpower, the robots and AI will do it for them. Since the former is more likely, companies and company officials will grow even richer with more efficiency, whilst workers will become even more impoverished. This widens

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the gap between the rich and the poor, although eventually, it will lead to an economic standstill.

Major parties involved

Amazon

Amazon is one of the world's biggest companies. Amazon is notorious for mediocre human resource management², and due to automation, it has laid off many workers. They are in favour of replacing manpower with AI as it is cheaper and more efficient in the long run. They develop many technologies which eliminate jobs; they are a big player in the development of autonomous vehicles, which would eliminate most taxi and driver jobs. They would also eliminate the jobs in driving schools as there would be no need to learn how to drive. Although there is much speculation on whether AI will or can ever truly replace humans, Amazon seems to be in favour of it.

Hong Kong Special Administrative Region (HKSAR)

The HKSAR artificial intelligence industry is growing. Right now the healthcare schedule and the metro system is monitored by AI. HKSAR is planning to also use artificial intelligence in the hospital for the purpose of taking care of elderly people, but not just that, they also plan on fighting climate change by monitoring energy use by AI. Traffic, city management and services are also planned to be monitored by AI. Hongkong will reach these goals by their "core team" that the GCIO is building. The "core team" will consist of digital experts that will initially advise departments on tech use.

IBM Cloud

IBM is currently the leading company in the field of artificial intelligence. IBM has led this field since the 1950s. A market research firm, IDC, ranked IBM as the leader in AI software platforms with a 13.7% market share in 2020, up 46% from the prior year. IBM Cloud creates software products for hybrid clouds, these are able to develop apps and deploy them on any cloud.

Republic of Korea (RoC or Korea)

South Korea has been promoting "trustworthy AI". It enhances the benefits of the technology but it also addresses the risk factors coming with it. South Korea is focussing on education and training to prepare the workforce for AI. South Korea is also investing in research in AI. So, South Korea is developing its AI capabilities. It had also expressed its ambition to position itself as a global contender in AI technologies markets.

² Taking care of their employees, especially the ones working the blue collared jobs which are usually manual

Spread

Spread is a Japanese lettuce production company which created the world's first farm that is reliant on robots and only on robots. The robots plant seeds, water the plants, and trim the lettuce after harvesting. These robots can harvest 30,000 heads of lettuce a day, and have fully replaced labour workers. This results in more efficient harvesting and thereby more product and revenue. The first IA farm is located in Kyoto, Japan.

The People's Republic of China

China's artificial intelligence industry is a multibillion-dollar industry that is rapidly expanding. The artificial intelligence market is expected to be worth RMB 400 billion by 2025, up from around RMB 150 billion in 2021. China has also pioneered many other developments, such as facial recognition via CCTV, cloning, and robotic staff. They also have lung regeneration and fully automatic oil rigs. Because of its government system, China still manages to keep its general quality of life pretty good regardless of GDP. China's GDP per capita is 10,434.8 USD per year. China has surpassed the United States as the world leader in artificial intelligence research.

United Kingdom (UK)

The UK has a growing and thriving AI industry. The UK was first in Europe and third in the world to make private investment in AI companies possible. Although the People's Republic of China and the United States of America are leaders in today's AI pioneering, the UK is one of Europe's leaders, according to the McKinsey report. The UK is globally in the top quartile for research, startup investment, digital absorption, innovation foundation and ICT connection.

United States of America (USA, US, or America)

The Federal government of America facilitates AI innovation by investing in shared public datasets. The American AI Initiative calls for agencies to make federal data, models, and computing resources more available to America's AI R&D experts, researchers, and industries. America is also one of the countries that is taking a lead in AI. US workers are the biggest victims of AI replacing employees. America's GDP per capita is 63,543.58 USD per year.

Timeline of Key Events

1820-1840	Industrial revolution. Inventions such as automated mills and several other inventions enter the market and replace manpower
1826	The first camera was developed, and influenced the

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	lack of need for portrait painters
1831	Reapers replace farmers harvesting crops
1976	Telegraphs were invented, which reduced the demand for mailmen
1937	Computers were in development
1974	The internet is created- probably the most notable invention of all time. This made a lot of things easier for companies, but at the same time erased the need for things such as Yellowpages/white pages and many other physical informative objects
1990s	Australia's economic recession
2010-	AI is in heavy development and continues to grow exponentially. Inventions and developments such as cloning, customer service replacements, automated security and immigration at airports, etc. replace manual workers in blue-collar jobs.
2011	Voice-controlled iOS. Siri is developed and released by Apple Inc. iOS. It can comprehend, observe, respond, and suggest to users
2014	Cortana, Microsoft's version of Siri and Alexa, is released
2014	Alexa was developed and released by Amazon. It can control other smart devices and perform all the functionality of a home assistant
2014	Google's first self-driving car passed a driving test in Nevada
2015	An open letter, signed by over a thousand AI researchers and large figures in technology development such as Elon Musk, Stephen Hawking, and Steve Wozniak, requests to ban militarised AI or lethal autonomous weapon systems (LAWS)
2016	Sophia, a humanoid robot created by Hanson Robotics, is expected to be the first "robot citizen." Her resemblance to a real human being, as evidenced by her ability to see, make facial expressions, and communicate via AI, set her apart from her predecessors.

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Previous attempts to solve the issue

There has been a great absence in the intervention of any powers to prevent or solve AI causing unemployment. As it is a very new issue which was especially brought to light during the COVID-19 pandemic, it is a very overlooked and underplayed issue which threatens millions of people worldwide. Many people argue that whilst AI replaces jobs, it creates many new ones, although no notable attempts have been made to ensure that laid-off workers will find jobs. This is a factor of human resource management, which, in many cases, is very poor.

Possible solutions

Putting a cap on how much % of labour can be performed with AI in companies. AI is slowly taking over all labour in many countries. To prevent this from happening one of the solutions can be regulating how much labour can be performed with AI in companies. This will make sure there will still be labour to do for humans, since humans have the empathy and communication skills AI lacks.

Mandating reskilling workshops or courses for a set period of time after the loss of jobs. A loss of jobs can have a big influence on the motivation of a worker. Losing jobs is most of the time a sign of instability in their work. To make sure society keeps working and keeps providing good work. Reskilling workshops or courses should be mandatory after a job loss. For humans to keep their jobs instead of AI taking over they should deliver good work, this solution makes sure of that.

In the event that the economy does come to a standstill, there are other ways to tackle the issue. An interesting solution which was implemented by Australia was to give every household \$4,000 with only one condition: the household *had* to spend it. Although risky, their economic crisis was resolved very quickly as money began to flow through the economy once again. Similarly, a proposal where citizens would be given a specific amount of money but would *have* to spend it could solve such economic problems.

When it comes to the poverty gap between the rich and the poor, there are many solutions. One way in which some countries, such as China and the DPRK, battle impending economic problems and thereby poverty, is by implementing systems where citizens get a stable income with the concept of "sharing". The communist ideology is a prime example of this and how, in practice, it can effectively keep economies afloat and citizens employed and paid. This fully prevents blockage in the circular economy.

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Appendices

- i. [GDP in greater detail](#)
- ii. [GNP in greater detail](#)
- iii. [Can AI truly replace humans?](#)