Forum: Economic and Social Council (ECOSOC) II

Issue: Preparing the global labor force for the rise of artificial intelligence

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Introduction

On the night of December 31, 1999, the world held its breath as they watched the clock turn into a new millennium, fearing a major global breakdown of computer systems and networks. The conspired panic from the Y2K bug, where fears that computers would not interpret the "00" in 2000 correctly and cause a glitch, did not inflict the level of damage foreseen and computer systems turned out fine (National Geographic, 2024). As we enter a new age of technological development, the world is facing another crisis: fears of artificial intelligence (AI) taking over the labor force and driving humans into despair. Businesses are automating job positions for increasing efficiency, psychologists are being replaced as Chatbots act as comfort only a fingertip away, and bank tellers are turning to automatic registration to minimize human mistakes (Sytsma and Sousa, 2023). Unprecedented numbers of jobs are eliminated, forcing people into unemployment and spurring economic unrest. However, no matter how advanced robots become, the human components that distinguish people from robots say that the current labor force is not completely hopeless. Preparations for the labor force can be made to cushion the impact. Whether the world enters a period of smooth coexistence with robots or despair into a bottomless pit of an unemployment crisis will be determined by the outcome of this assembly.

Definition of Key Terms

Artificial Intelligence (AI)

A wide-ranging branch of computer science is concerned with building smart machines capable of performing tasks that often require human intelligence such as interpreting speech, playing games, and generating texts. Learning typically involves processing massive amounts of data, and looking for patterns to model their decision-making after. Since intelligence is difficult to define, it is important to distinguish between Strong AI and Weak AI. Capable of solving problems they have never been trained

to do, Strong AI does not exist in the real world yet and only in movies such as the robots from *Westword* or Data from *Star Trek: The Next Generation*. Weak AI works within a limited context and performs a narrow task with examples including self-driving cars, Siri and other smart assistants, Netflix's recommendation engine, and the all-student-renowned Chat GPT (Schroer, 2024).

Machine Learning

A subfield in Artificial Intelligence (AI) that uses algorithms to help a computer "learn" how to become progressively better at a task training from some datasets, taking a few seconds or days. Based on some input data, the algorithm will produce an estimate of a potential pattern. The model will be assessed by an error function. If better data points can be placed into the model, weights will be adjusted to reduce differences between known examples and model estimates. The process repeats until the algorithms achieve a certain accuracy. Machine learning is not to be confused with a subset known as deep learning, where algorithms learn through their own methods of computing with minimal human help and go "deep" in training with large amounts of data that can range from days to weeks (Grieve, 2023).

Ethics of Artificial Intelligence

The ethics of artificial intelligence is a system of morals and techniques intended to guide the responsible use of artificial intelligence. Rapid developments in this field of technology pose potential harm to poorly designed projects built on dubious or erroneous data that can have unintended consequences. UNESCO outlines ten core principles to human rights regarding artificial intelligence which include proportionality and do not do harm, safety and security, right to privacy and data protection, multi-stakeholder and adaptive governance, responsibility and accountability, transparency and explainability, human oversight and determination, sustainability, awareness and literacy, and fairness and non-discrimination. Effectively implementing the principles will ensure a healthy world of artificial intelligence usage (UNESCO, 2024).

Background Information - Edmund

The Late 18th-Century: Mechanization and Steam Power

The First Industrial Revolution began as agrarian societies became urban communities, spurring a period of technological advancements and introducing inventions such as the water frame, the cotton gin, the seed drill, the steam engine, and much more. One of the most notable was the spinning jenny, which produced wool and cotton in unprecedented quantities incomparable to works hand-crafted by artisans. Steam-powered mills and factories that massively improved productivity also offered jobs to the

growing urban population. The increasing industrialization eventually faced a backlash from the Luddites, a group of weavers and artisans who wrecked looms and burned factories because they believed the machines robbed them of their livelihoods. Overall, this timespan was marked by increased productivity, lowered prices, the creation of new jobs, and the production of more goods (Fleming, 2020).

The Late 19th Century: Electricity and Mass Production

With the discovery of electricity, the Second Industrial Revolution started a period of massive production. A rising need for steel in railroads and petroleum for automobiles led to the construction of factories to meet consumer demands. The railroad increased connectivity among people around the world. Before the rails, messages took up to months to be delivered by horseback. Trains carried mail much more quickly, shortening delivery time to days, and soon, it was used to transport other types of goods. Additionally, Henry Ford's invention of the assembly line, inspired by a pig slaughterhouse, improved output efficiency and lowered production costs. The Model T made car ownership within reach of the average working American. Many car manufacturers soon adopted Ford's assembly line and subsequently drove up the need for glass, steel, and rubber, expanding the domestic supply chain needs (Crawford, 2017).

The Mid-20th-Century: Computers and Mechanization

Beginning in the 1950s, mechanical and electronic technology began moving toward digital devices, marking The Third Industrial Revolution. The 3D printer, which created any solid object by building successive layers of material, transformed the production of anything too complex for a traditional factory to handle. If a certain tool was missing at a construction site, workers often had to stall the project until the tool arrived. Due to its ease of customization, construction workers can download the design of a missing tool and print it, saving a valuable amount of time. Another invention, carbon fiber, is stronger and more flexible and is starting to replace steel in mountain bikes and airplanes. Nanotechnology has made wound-healing bandages possible. Factories no longer needed workers in oily jumpsuits to crank machines and dull repetitive tasks became obsolete. Manufacturing jobs migrate to office jobs and require more sophistication in skill (The Economist, 2012).

The Early 21st Century: The Era of Artificial Intelligence (AI)

The Fourth Industrial Revolution was driven by the growth in popularity of AI for data analysis and creative tasks and automation to replace routinely monotonous tasks has appealed to businesses large and small to advance technologically. The Goldman Sachs report forecasted that 300 million full-time jobs will be replaced by AI, causing a significant disruption in the job market. A McKinsey report estimated that 30% of hours worked in the US will be automated by 2030. Among most current full-time careers, tech jobs involving coding, media jobs relating to advertising, legal industry jobs, market

research analysts, teachers, finance jobs in advising or analyzing, traders, graphic designers, accountants, and customer service agents are some of the ten most susceptible occupations to replacement. This overwhelming competition from their man-made counterparts is forcing workers to constantly improve their skills and stay valuable in the market (Zinkula and Mok, 2024).

Major Countries and Organizations Involved

International Monetary Fund

The International Monetary Fund (IMF) is a global organization that assists 190 countries with financial stability and monetary cooperation. It has analyzed data on the jobs impacted by the rise of artificial intelligence and created an AI Preparedness Index to aid countries in predicting trends and potential obstacles. Furthermore, the IMF also provides economic policy advice and financial assistance to its member countries, offering guidance to countries to support the transition to an economy with AI. This is extremely important to member states that have little experience or knowledge in fostering a good economic atmosphere as it could guide them to providing better support for their people and improving their economy.

World Economic Forum

The World Economic Forum (WEF) is an international non-governmental organization that fosters public-private cooperation between nations. The WEF aims to facilitate cooperation between different groups such as governments, businesses, and societies to develop and implement policies and plans. This is especially integral to preparing the workforce for AI as cooperation between businesses and governments can lead to the development of effective solutions that help ease the transition of jobs for the global workforce. Similar to the IMF, the WEF produces reports and research of data on technological changes, the global economy, and the workforce as a whole. This can provide countries with insights on global trends and possible issues that may occur to aid them in the development of solutions.

Singapore

Singapore is the leading country in preparing the workforce for AI. They have heavy investments for education and assist at-risk workers. Furthermore, they have implemented support for transitions to new workplaces. Since the country has a small population, artificial intelligence is actually beneficial to the nation in upholding its economy. Singapore aims to triple its AI workforce to fifteen thousand in the next three years.

China

China placed AI as a national priority and has many significant investments in education and technology. The country released the New Generation Artificial Intelligence Development Plan in 2017 and aims to become a global AI leader by 2030 and has emphasized talent development as a core strategy. Moreover, the government has allocated funds for AI research and development. The country has started initiatives to enhance AI education, train skilled professionals, and promote innovation to drive economic growth and technological advancement. AI-related courses have been implemented into various Chinese educational curriculums. In addition, scholarships and training programs have been created to further incentivize the learning of AI. Employment rates in China are estimated to increase 12% over the next two decades due to advancements in artificial intelligence.

United States of America

The United States of America has promoted STEM education, training programs, and public private partnerships in order to help the workforce. The federal government has allocated funding to support STEM education and federal funding. The National Artificial Intelligence Research institutes program also funds many multidisciplinary AI research centers across the country. The government has also supported the standardization of AI technologies in areas regarding ethics, security, and development.

India

India has been developing a national AI strategy to improve their artificial intelligence research and development. India's Ministry of Electronics and Information Technology has developed plans to integrate courses regarding AI in primary education. Furthermore, there has been a rise in AI startups regarding healthcare, finance, and agriculture. India is also negotiating with 29 member countries of the Global Partnership on Artificial Intelligence (GPAI) for the standardization of AI technology. Even though many job opportunities have opened up in AI-related fields, employees in India has been severely impacted by automation.

South Korea

As South Korea is home to a multitude of big tech companies such as Samsung, SK, and LG, the nation aims to embrace technological advancements in artificial intelligence. The government has developed plans to aid employees adapt during transitions to an AI based economy and has supported

public private collaboration. South Korean businesses have been proactive in organizing campaigns to educate employees on the potential risks of the misuse of AI and prevent data leaks.

Timeline of Events

Since the introduction of Artificial intelligence, AI has brought both positive and negative impacts to modern-day society. The convenience of AI made daily life easier and more convenient. However, the convenience of AI challenged workers from taxi drivers to factory workers. Companies started to replace these expensive workers with cheaper machines.

Date	Description of event
1948	Alan Turning introduced the idea of "Artificial Intelligence."
1950	Alan Turing proposed the Turing Test, questioning if machines can think.
1956	The first AI conference, called The Dartmouth Summer Research Project on Artificial Intelligence, was held in Hanover, New Hampshire.
1961	The first industrial robot invented by George Devol was built and deployed in a General Motors assembly line in Ewing Township, New Jersey.
1970s-1980s	AI experiences a halt due to limited capabilities and hype exceeding progress.
1980s	Robotics and industrial automation have begun to replace manual labor in manufacturing.
1990s	Expert systems, programmed with human expertise, automate decision-making processes in specific domains.
2000s	The rise of the internet fuels advances in machine learning and data analysis, paving the way for broader AI applications.
2010s	Deep learning algorithms make significant breakthroughs in image and speech recognition, natural language processing, and other areas
2014	Self-driving car projects by Google and Waymo gain momentum, raising questions about transportation disruption
2014-2016	AI adoption accelerates across industries, with applications in customer service, marketing, finance, and healthcare.

2020	Continued advancements in AI lead to further automation and transformation of work, requiring ongoing adaptation and policy discussions.
2023	ChatGPT, a large language model, exhibits creativity and humor in generating text, prompting discussions about AI's role in creative fields.

Relevant UN Resolutions and Treaties

- Declaration on the Critical Economic Situation in Africa, 3 December 1984 (**A/RES/39/29**)
- ILO Declaration on Fundamental Principles and Rights at Work 1998
- Guidelines for the Sustainable Development of the Labour Market, 15 October 2018
- The Recommendation on the Ethics of Artificial Intelligence, 25 November 2021

Possible Solutions - Michelle

Mentorship & Training Programs

By providing the labor force with resources, guidance, and mentorship, governments can educate businesses to reduce impact and create awareness. It allows for the development of soft skills, including good leadership, communication, time management, and adaptability, that an AI would otherwise not be able to accomplish. Furthermore, the creation of industry-specific programs to train workers in fields AI can not replace could help ease fear and instability within the workforce.

Government Initiative

State governments play a crucial role in alleviating the fear of instability within the workforce as they hold the power to support workers during their transitions to new jobs. Governments could provide extra funds and off-days as well as encourage businesses to be more lenient in aiding their employees' transitions. Furthermore, state governments have the ability to reach out to other nations to spread awareness, allowing for more support to be given to the global workforce as a whole.

Education

Integrating STEM education into early education levels could help build a solid foundation for AI-related jobs, conditioning them for the ever-evolving world surrounding technology and teaching them to use the resources they currently have available. Furthermore, programs could be created between academic and professional environments that help train and prepare the workforce for their future jobs. This knowledge will educate the future workforce on the knowledge of AI and how they can use it to their advantage.

Questions for Further Research

Delegates are encouraged to thoroughly read through the chair report and obtain a general understanding of the issue of preparing the global workforce for the rise of artificial intelligence. Some questions to consider while drafting resolutions include:

How has the world economy reacted and prepared for job losses in the past?

What are some improvements to be made on current resolutions attempting to resolve this issue?

How has the policies of each nation state reacted to artificial intelligence?

How can other nation states learn from the successes/failures of these policies?

Who are the major parties most likely to be affected by your proposed solutions?

Bibliography

"AI Can Transform Education for the Better." The Economist. The Economist, https://www.economist.com/business/2024/01/11/ai-can-transform-education-for-the-better. Accessed 18 Jan. 2024.

"AI Will Transform the Global Economy. Let's Make Sure It Benefits Humanity." IMF Blog, https://www.imf.org/en/Blogs/Articles/2024/01/14/ai-will-transform-the-global-economy-lets-make-sure-it-benefits-humanity. Accessed 18 Jan. 2024.

Crawford, Mark. "Top 5 Robot Jobs in Manufacturing." The American Society for Mechanical Engineers ASME, 29 Mar. 2017, www.asme.org/topics-resources/content/top-5-robot-jobs-manufacturing.

Decent Work and the Sustainable Development Goals: A Guidebook on SDG Labour Market Indicators. (2018, October 15). https://www.ilo.org/global/statistics-and-databases/publications/WCMS_647109/lang--en/index.html.

"Deep Learning vs. Machine Learning." Grieve, Patrick. Zendesk, 14 Nov. 2023, www.zendesk.com/blog/machine-learning-and-deep-learning/?_ga=2.251156110.901814091.1705334993-1353437032.1705334993.

Fleming, Sean. "A Short History of Jobs and Automation." World Economic Forum, 3 Sept. 2020, www.weforum.org/agenda/2020/09/short-history-jobs-automation/.

"India to Have AI Education in the School Curriculum." INDIAai,
https://Indiaai.gov.in/article/india-to-have-ai-education-in-the-school-curriculum. Accessed 27 Jan. 2024.

"The Third Industrial Revolution." The Economist, The Economist Newspaper, 21 Apr. 2012,
www.economist.com/leaders/2012/04/21/the-third-industrial-revolution

Schroer, Alyssa. "Artificial Intelligence (AI): What Is AI and How Does It Work?" Built In, 3 Jan. 2024,
https://builtin.com/artificial-intelligence.

Singh, N. (2023, October 18). The timeline of artificial intelligence – from the 1940s. Verloop.io.
https://verloop.io/blog/the-timeline-of-artificial-intelligence-from-the-1940s/#enigma-was-broken-using-ai-19.

"Y2K Bug." National Geographic, 2024, www.education.nationalgeographic.org/resource/Y2K-bug/.

Sytsma, Tobias and Éder Sousa. "Artificial Intelligence and the Labor Force." Rand Corporation, 11 Oct. 2023, https://www.rand.org/pubs/research_reports/RRA2655-1.html.

Team, R. (2023, December 19). Unimate. ROBOTS: Your Guide to the World of Robotics.
https://robotsguide.com/robots/unimate.

UN. General Assembly (39th sess. : 1984-1985). (1984, December 7). Declaration on the critical economic situation in Africa. United Nations Digital Library System.
https://digitallibrary.un.org/record/74504?ln=en.

"193 countries adopt first-ever global agreement on the Ethics of Artificial Intelligence." UN News.
https://news.un.org/en/story/2021/11/1106612.