

Forum: United Nations Economic and Social Council
Question of: Promoting Means to Regulate the Ethical Use of Artificial Intelligence in Employment
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Introduction

Artificial Intelligence (AI) is defined as the ability of a digital computer or computer-controlled robot to execute actions that are usually done by intelligent beings.¹ The term AI is now prevalently used to reference any advancements made by computer programs to automate problem-solving with reasoning usually done by human intelligence.²

Since work can be completed more rapidly with AI than with humans, AI can be beneficial when implemented in processes requiring intelligent decision-making. Data shows that the use of AI in many business sectors has grown by 270% over the last four years.³ But as AI and automation become increasingly capable, people question their accountability and sustainability. What happens after job obsolescence? Will robots have rights at work? The effects of AI use branch into the economy and employment rates, obliging us to make good, sustainable use of artificial intelligence. Peter Norvig, Director of Research at Google, said, “the challenge with artificial intelligence now is to make sure everyone benefits from this technology.”⁴

McKinsey Global Institute reported in its two-year study that by 2030, AI and robots could replace up to 30% of the current global human labor. This could mean that automation will displace between 400 and 800 million jobs by 2030 and require around 375 million people to change job categories entirely.⁵ In particular, high-skilled white-collar jobs such as business professionals, managers, science and engineering professionals, and legal, social, and cultural professionals will be most exposed

¹ Copeland, B.. "artificial intelligence." Encyclopedia Britannica, March 18, 2022. <https://www.britannica.com/technology/artificial-intelligence>.

² Stahl, Ashley. "How AI Will Impact the Future of Work and Life." Forbes. Forbes Magazine, December 10, 2021. <https://www.forbes.com/sites/ashleystahl/2021/03/10/how-ai-will-impact-the-future-of-work-and-life/?sh=467770a279a3>.

³ Lin, Ying. "10 Artificial Intelligence Statistics You Need to Know in 2022 [Infographic]." Oberlo. Oberlo, March 14, 2022. <https://www.oberlo.com/blog/artificial-intelligence-statistics>.

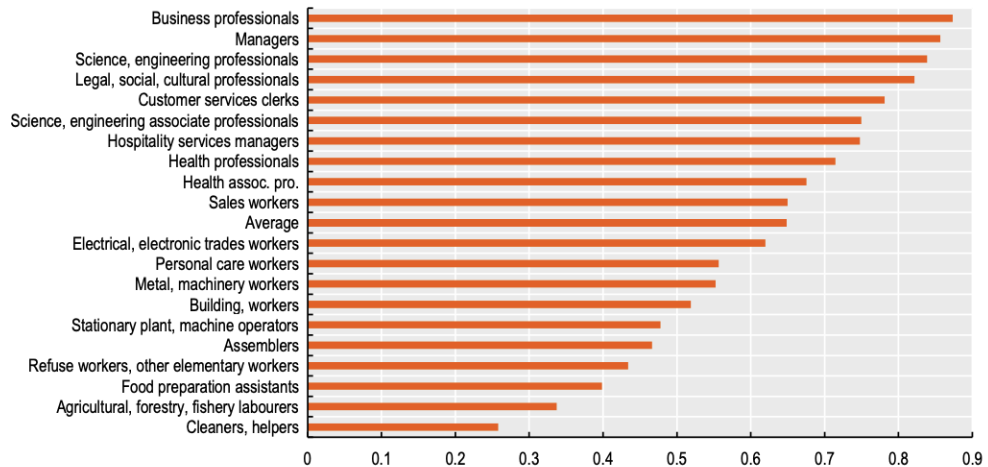
⁴ "Why the Biggest Challenge Facing AI Is an Ethical One." BBC Future. BBC. Accessed July 1, 2022. <https://www.bbc.com/future/article/20170307-the-ethical-challenge-facing-artificial-intelligence>.

⁵ McClelland, Calum. "The Impact of Artificial Intelligence - Widespread Job Losses." IoT For All, March 28, 2022. <https://www.iotforall.com/impact-of-artificial-intelligence-job-losses>.

to AI (Figure 2)⁶. On the other hand, low-skilled jobs have so far been less vulnerable to automation because they usually require face-to-face human interaction. It cannot be guaranteed that robots will never overcome low-skilled jobs, but there is little incentive to robotize these tasks because there is an ample supply of humans willing to do them for low wages.⁷

Figure 2. Highly educated white-collar occupations are among the occupations most exposed to AI

Average exposure to AI across countries by occupation, 2012 (selected occupations)



Note: The averages presented are unweighted. Cross-country averages are taken over the 23 countries included in the analysis.
Source: Georgieff and Hye (2021_[2]).

On a global level, the top four economies (China, India, Japan, and the United States) will face the most considerable impact because they account for almost two-thirds of the number of employees associated with activities that can be automated in the future. Following that trend, countries with large labor forces like China and India would encounter immense potential employment impact. Moreover, discrepancies will arise among nations in the pace and extent of automation adoption due to numerous factors such as technical capability, economic capacity, and the benefits countries expect from automation.

Automation could be used in advanced economies like Australia, France, Italy, South Korea, the United Kingdom, and the United States to boost productivity for economic growth in the face of the aging

⁶ “Artificial Intelligence and Employment - OECD.” Accessed June 30, 2022.
<https://www.oecd.org/future-of-work/reports-and-data/AI-Employment-brief-2021.pdf>.

⁷ Manjoo, Farhad. “Will Robots Steal Your Job? If You're Highly Educated, You Should Still Be Afraid.” Slate Magazine, September 25, 2011.
http://www.slate.com/articles/technology/robot_invasion/2011/09/will_robots_steal_your_job.html.

25th Annual Session of the **Seoul Model United Nations**

workforce and the decline in the working-age population. Thus, these economies would like to invest in and pursue a rapid transition to automation.

In emerging economies with aging populations like Argentina, Brazil, China, and Russia, automation can serve as a means to maintain productivity and the current GDP per capita. To attain their economic aspirations, emerging countries would need to implement not only automation but also additional sources of productivity, such as process transformations. On the other hand, in emerging economies with younger populations like India, Mexico, Saudi Arabia, and South Africa, the continued growth of the working-age population could independently maintain the current GDP per capita. However, given their high growth aspirations and competitive outlook, automation and additional productivity-raising measures will be necessary to sustain their economic development.⁸

In efforts to resolve unemployment and ethics issues caused by AI implementation, the United Nations Economic and Social Commission for Western Asia's stated in its publication "Developing an artificial intelligence strategy: National guide" that AI will eliminate jobs thus countries should implement innovation-friendly legislation to provide the required AI infrastructure. The text depicted innovation-friendly legislation as one that addresses transparency, understandability, predictability, accountability of AI algorithms, risk management, data protection, and safety."⁹

The UN Chief Executives Board for Coordination outlined in its CEB/2020/6/Add.1; Report of the High-level Committee on Programmes on its virtual consultation on the ethics of artificial intelligence that in the Committee's consultation on the ethics of artificial intelligence convened by UNESCO on July 29, 2020, Member States said that a stronger international legal framework was needed to ensure justice and the protection of human rights in the era of AI. Furthermore, it highlighted the differences within the countries in terms of development, as AI technology lacked the fast pace of growth that other areas such as information and communication technologies in developing countries.¹⁰

This agenda dives into the core facets of the inter-relations between economic and technological parameters. The core understanding of how artificial intelligence has led to mainstream capital-intensive

⁸ "The Countries Most (and Least) Likely to Be Affected by Automation." Harvard Business Review, September 20, 2017. <https://hbr.org/2017/04/the-countries-most-and-least-likely-to-be-affected-by-automation>.

⁹ "Developing an Artificial Intelligence Strategy: National Guide." United Nations Economic and Social Commission for Western Asia, January 7, 2021. <https://archive.unescwa.org/publications/artificial-intelligence-strategy-national-guide>.

¹⁰ "Report of the High-Level Committee on Programmes on Its Virtual Consultation on the Ethics of Artificial Intelligence." United Nations. United Nations. Accessed July 1, 2022. <https://digitallibrary.un.org/record/3895564?ln=en>.

production potentials with output soaring in sectors such as manufacturing yet employment declining by massive brackets.

Definition of Key Terms

Artificial Intelligence

Artificial Intelligence, or in short, AI, is the ability of a computerized PC or computer-controlled robot to perform undertakings ordinarily connected with smart systems.¹¹ AI allows computers to effectively execute very complex tasks such as proving mathematical theorems, responding to verbal orders, and predicting songs a person likes.¹² To this date, AI did not transcend the threshold of reaching human flexibility over various tasks requiring everyday knowledge. However, some programs are advancing AI to the point of diversifying fields of expertise to medical diagnosis, computer search engines, and voice or handwriting recognition. Such rapid advancements that allow AI to be part of the human economy bring ethical questions the international community must consider.

Ethics

Ethics, or moral philosophy, is the system of accepted beliefs around what is morally good and bad, as well as morally right and wrong.¹³ Delving into ethics helps discern standards by which human actions can be judged right or wrong. Ethics in AI pertains to how humans design, make, use, and treat AI systems. AI is projected to leave a significant impact on human and economic development. At the same time, the application of AI in employment has raised fundamental questions about the limits of AI's ability, the risks, and ways to control the risks. One ethical issue revolving around AI is privacy. The continuous increase in the use of AI makes all data collection and storage digital, risking individuals' rights to keep their information private. The ethical issues of AI go beyond just the accumulation of data: AI can manipulate both online and offline human behaviors, undermining rational decisions. Many marketers of companies use big data and algorithms to exploit consumers' behavioral biases to maximize

¹¹ Copeland, B.. "artificial intelligence." Encyclopedia Britannica, March 18, 2022.
<https://www.britannica.com/technology/artificial-intelligence>.

¹² Marr, Bernard. "13 Mind-Blowing Things Artificial Intelligence Can Already Do Today." Forbes. Forbes Magazine, December 10, 2021.
<https://www.forbes.com/sites/bernardmarr/2019/11/11/13-mind-blowing-things-artificial-intelligence-can-already-do-today/?sh=42fb719d6502>.

¹³ Singer, P.. "ethics." Encyclopedia Britannica, December 15, 2021.
<https://www.britannica.com/topic/ethics-philosophy>.

profit.¹⁴ After understanding the technology itself and from an ethical perspective, a societal response such as a regulation or a law should be crafted.

Automation

Automation is the technique of making mechanical technologies produce and deliver goods and services with minimal human intervention.¹⁵ Automated systems are usually used for electromechanical devices or machines. Automation's direct impact on an individual is the dislocation of human labor from the workplace. The long-term effects of automation on employment are known to be unemployment, yet it is debatable. Workers have indeed lost jobs through automation, but population increases and consumer demand for automation products have compensated for these losses. Automation would also change the type of work done in factories. The automated factory uses sophisticatedly-programmed machines rather than manual labor. Therefore, the work would be more centralized on knowledge and technical skills than physical work. For example, the work focus would be shifted to machine maintenance, improved scheduling and process optimization, systems analysis, and computer programming and operation.¹⁶

Employment

Employment means the state of someone being paid to work for a company or organization.¹⁷ The condition of one's employment may change based on macroeconomic movements, technological advancements and automation, and seasonal employment fluctuations.¹⁸ According to data from leading international research organizations, companies can deliver better customer service using artificial intelligence than human agents (27%).¹⁹ So, global consumers (73%) are open to using it to become easier.²⁰ As a result, some experts (48%) think that robots will replace white- and blue-collar employees.

¹⁴ Müller, Vincent C. "Ethics of Artificial Intelligence and Robotics." Stanford Encyclopedia of Philosophy. Stanford University, April 30, 2020. <https://plato.stanford.edu/entries/ethics-ai/#Intr>.

¹⁵ Techopedia. "What Is Automation? - Definition from Techopedia." Techopedia.com. Techopedia, June 8, 2021. <https://www.techopedia.com/definition/32099/automation>.

¹⁶ Groover, M. P. "automation." Encyclopedia Britannica, October 22, 2020. <https://www.britannica.com/technology/automation>.

¹⁷ "Employment." Cambridge Dictionary. Accessed July 2, 2022. <https://dictionary.cambridge.org/dictionary/english/employment>.

¹⁸ Vogt, Crystal. "What Factors Impact Employment?" Small Business - Chron.com. Chron.com, March 12, 2019. <https://smallbusiness.chron.com/factors-impact-employment-20026.html>.

¹⁹ Manyika, James, Susan Lund, Michael Chui, Jacques Bughin, Jonathan Woetzel, Parul Batra, Ryan Ko, and Saurabh Sanghvi. "Jobs Lost, Jobs Gained: What the Future of Work Will Mean for Jobs, Skills, and Wages." McKinsey & Company. McKinsey & Company, April 5, 2022. <https://www.mckinsey.com/featured-insights/future-of-work/jobs-lost-jobs-gained-what-the-future-of-work-will-mean-for-jobs-skills-and-wages>.

²⁰ Arntz, Melanie, Ulrich Zierahn, and Terry Gregory. "The Risk of Automation for Jobs in OECD Countries: A Comparative Analy." OECD Social, Employment and Migration Working Papers. OECD Publishing, May 14, 2016. <https://ideas.repec.org/p/oec/elsaab/189-en.html>.

25th Annual Session of the **Seoul Model United Nations**

This will create a significant change in global employment: the 2017 McKinsey report says that as many as 800 million jobs and 475 million employees could be disrupted by automation before 2030.²¹

Technology can also significantly impact job quality. For example, innovative technologies have simplified jobs like dishwashing.²²

Productivity

Productivity measures output per unit of input, such as labor, capital, or any other resource. Labor productivity takes labor growth, wage levels, and technological improvement into account when being calculated. The more productive a country's economy is, the more economic growth and competitiveness the country will gain.²³ Raising productivity is the key to increasing the standards of living. By raising productivity, AI could add nearly \$16 trillion to the world economy by 2030.²⁴ For example, AI can be used in the medical field to streamline drug research and help with diagnoses. AI can automate mundane tasks, allowing employees to conduct other tasks.²⁵

Heuristic Programming

Heuristic Programming is the process by which computers approach human learning through experience-based rules or protocols. In other words, technology attempts to simulate the thinking process of the instructor by utilizing its past experiences. Such a method of problem-solving is based on judgment, rather than on an exact, analytical solution. Heuristic programming searches for a satisfactory, rather than the optimal, solution to a problem.²⁶ Heuristic programming is relevant to the agenda because the ability of computers to reach human thinking brings concerns regarding the extent to which computers can exert their knowledge and power when conducting labor.

²¹ Manyika, James, Susan Lund, Michael Chui, Jacques Bughin, Jonathan Woetzel, Parul Batra, Ryan Ko, and Saurabh Sanghvi. "Jobs Lost, Jobs Gained: What the Future of Work Will Mean for Jobs, Skills, and Wages." McKinsey & Company. McKinsey & Company, April 5, 2022. <https://www.mckinsey.com/featured-insights/future-of-work/jobs-lost-jobs-gained-what-the-future-of-work-will-mean-for-jobs-skills-and-wages>.

²² Adam Saunders. "Technology's Impact on Growth and Employment." OpenMind. Accessed July 2, 2022. <https://www.bbvaopenmind.com/en/articles/technology-s-impact-on-growth-and-employment/#:~:text=Throughout%20history%2C%20machines%20have%20helped,so%20too%20did%20job%20growth>.

²³ Kenton, Will. "Productivity." Investopedia. Investopedia, February 8, 2022. <https://www.investopedia.com/terms/p/productivity.asp>.

²⁴ PricewaterhouseCoopers. "PWC's Global Artificial Intelligence Study: Sizing the Prize." PwC. Accessed July 2, 2022. <https://www.pwc.com/gx/en/issues/data-and-analytics/publications/artificial-intelligence-study.html>.

²⁵ "Why Salespeople Need to Develop 'Machine Intelligence.'" Harvard Business Review, April 24, 2017. <https://hbr.org/2016/06/why-salespeople-need-to-develop-machine-intelligence>.

²⁶ "Heuristic Model and Programming Used in Decision Making: Management." Essays, Research Papers and Articles on Business Management, March 4, 2017. <https://www.businessmanagementideas.com/management/decision-making-management/heuristic-model-and-programming-used-in-decision-making-management/11361>.

Human Skills

Human skills, or soft skills, define our ability to find connections with one another and demonstrate interpersonal skills. Human skills allow positive workplace performance because they improve innovation, adaptive thinking, collaboration, and more. In the workplace, one human skill that is essential in the digital era is empathy. In times of conflict, understanding others and effectively communicating cultivate long-term relationships that technology cannot follow. Adaptability and trust-building are also important, as challenges are inevitable, and humans can form innovative solutions.

27

Timeline of Key Events (at least 10)

1923 - Rossum's Universal Robots (R.U.R) Rossum's Universal

The term “robot” is coined - Rossum's Universal Robots (R.U.R) Rossum's Universal Robots is a 1920 science fiction play about robots being introduced to the world and ends with the robots making humans extinct as the result of a rebellion. Robot comes from the Czech word “Robota” meaning forced labour typically performed on the commander's instructions. This word was firstly used in this play despite other words such as “android” or “automaton” more commonly being used for machines capable of replicating human behavior.

1945 - First programmable, digital computer - ENIAC

ENIAC, short for Electronic Numerical, Integrator and Computer is the first programmable and digital computer. In 1942 John Mauchly, a physicist, came up with the idea of an electronic calculating machine. His proposal was recognized by the US military therefore the ENIAC was built to calculate complex calculations required for the on-going second world war. However, upon finishing it, the war had already ended. It was the most powerful calculating machine built at that time and remained as the most powerful for a decade. It could execute programs with variables, and alter instructions by considering value. Despite being built for calculating purposes, it could be used for a wider range of tasks and purposes.

1950 - Test developed to test a artificial intelligence ability to mimic human behavior - The development of the Turing Test

²⁷ Lewis, Abbey. “5 Key Human Skills to Thrive in the Future Digital Workplace.” Harvard Business Publishing. Abbey Lewis /wp-content/uploads/2018/12/HBPubCorpLearn_wide_crimson.svg, July 22, 2021. <https://www.harvardbusiness.org/5-key-human-skills-to-thrive-in-the-future-digital-workplace/#:~:text=What%20exactly%20are%20human%20skills,connections%20with%20colleagues%20and%20customers.>

25th Annual Session of the **Seoul Model United Nations**

The Turing test is a test for artificial intelligence to determine if the AI is capable of thinking like humans. This test was first proposed by Turing in his paper “Computing Machinery and Intelligence.” This test is inspired by a popular party imitation game. In the imitation game, a person of either gender questions a male being and a female. The integrator is not informed about who is who therefore, only communicates through written notes. The female and male respond to the questions, and the integrator has to guess who is who. In Turing’s version, the integrator has to identify who is the AI and who is the human. However, this test has been criticized for assessing whether humans can be tricked by AI rather than determining if AI is capable of thinking like humans. This test has some flaws, with the biggest one being Turing never specifying if the integrator should be aware of the AI being present. The differences in interpretation made it unreliable as a comparison between different AIs. This test was highly criticized. Nevertheless, it is a popular assessment of human-like thinking among artificial intelligence to this day

1956 - Known as the founding event of artificial intelligence - Dartmouth Workshop

In 1956 John McCarthy, an assistant mathematics professor at Dartmouth College, decided to organize a session involving skilled mathematicians, physics, and computer specialists to discuss “thinking machines.” McCarthy decided to introduce the term “artificial intelligence” in order to specify automata theory and to exclude cybernetics which was another heavily focused topic at that time. Despite having no materialistic outcome, this event proved significant in initiating a focus on plane geometry theorems, AI problem-solving skills, processing languages, and algorithmic studies.

1956 - The first artificial intelligence program

Logic Theorist Herbert Simon invented the first artificial intelligence program to mimic reasoning and logical puzzle-solving skills shown by humans. This AI is known as the “Logic Theorist”. In the early 1950s, Simon was consulting a corporation when he noticed a printer typing out a map using characters. Simon realized machines could manipulate symbols and simulate decision-making skills. Simon first presented the Logic Theorist at the Dartmouth conference. The Logic Theorist’s goal was to prove theorems in symbolic logic. The logic theorist introduced the field of heuristic programming and managed to prove 32 theorems out of the 52 presented.

1961 - Invention of the first industrial robot - Unimate

The Unimate was invented by George Devol in the 1950s using the patent he filed in 1954, which was granted in 1961. The Unimate has a large computer-like box that was connected to another box that had an arm. The Unimate performed tasks such as transporting die casting from assembly lines and installing them on auto bodies. This was a dangerous task, as many workers had lost limbs before in an

25th Annual Session of the **Seoul Model United Nations**

accident. The first version of the Unimate used vacuum tubes as digital switches; however, the later versions used transistors.

1965 - Creation of natural language processing computer language - ELIZA

ELIZA is a natural language processing program created at the MIT artificial intelligence laboratory. It was created to demonstrate the superficiality of communication between humans and AIs. ELIZA simulated conversations based on pattern matching and substitution methodology, which gave users a false illusion of understanding however, in reality, ELIZA was not able to contextualize information. Users were able to have conversations with ELIZA. ELIZA assigned values to the words the user inputted and used the value of the words to reorder them in a form of a question or a response. ELIZA is described as a mock Rogerian Psychologist.

1974 to 1980 - First hiatus of artificial intelligence due to lack of funding and interest - First AI winter

AI winters are a period of reduced interest and funding for artificial intelligence research. It is analogous to nuclear winters. In 1973, professor Lighthill was requested by the UK parliament to write a report on artificial intelligence in the UK. Lighthill heavily criticized artificial intelligence and went as far as declaring it impossible and called existing artificial intelligence toys. This report made many research facilities discontinue artificial intelligence research as the result of a lack of funding. The research was still being done, but it would not prove any significant outcome. AI interest started to show up once again after Alvey, the British government's program started to fund research projects as a response to the Japanese fifth-generation project.

1987 to 1993 - Second hiatus of artificial intelligence due to lack of funding and interest - Second AI winter

As the hype started after the first AI winter, developers started to be skeptical about whether the new interest would show promising results. At the Association for the Advancement of Artificial Intelligence (AAAI) conference in 1984, scientists predicted that there would be once again a lack of funding as disappointments made from failed programs due to unrealistic standards. In the same year, John McCarthy criticized expert systems that lacked common knowledge, which made them unable to function. He gave the expert systems MYCIN, built to assist physicians in a situation where a patient has Cholerae Vibrio. The systems prescribed two weeks of tetracycline. Even though it would kill off all the bacteria, the patient was likely to be dead. As a result of this finding, the director of DARPA ISTO (Defense Advanced Research Project Agency & Information and Science Technology Office) stated that

25th Annual Session of the **Seoul Model United Nations**

even though AIs seemed promising, they showed little to no success. This dramatically decreased AI funding for the following years before it resurfaced again.

2016 - Invention of the first humanoid robot citizen - Sophia

Sophia is a humanoid robot developed by Hanson robotics, a Hong-Kong company. Sophia was activated in February 2016, and in less than two years, Sophia became a Saudi Arabian citizen. Sophia is designed to help in elderly homes, events, and crowds. Sophia is conceptually similar to ELIZA, which gives a false illusion of contextualizing information while it actually just gives a generic response. In November 2017, Sophia was announced as UNDP's (United Nations Development Program) first-ever innovation champion for Asia and the Pacific, and Sophia pledged to work towards the United Nations Sustainable Development Goals.

Position of Key Member Nations and Other Bodies

Republic of Korea

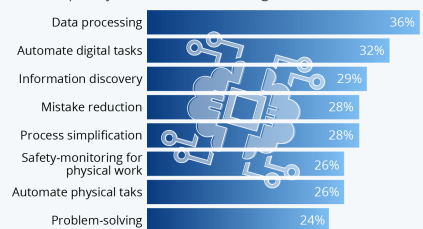
South Korea has the greatest robot-to-worker ratio in the world at 631 robots per 10,000 workers. Virtual reality (VR) and other AI technologies are primarily utilized in South Korea to enhance classroom instruction and skill development.²⁸ They enable training repetition without the need for expensive equipment. The Korean Labor Market Information System, which builds on the nation's advanced information technology, integrates big data analysis and AI to increase the accuracy and efficiency of the service platforms. This enables job searchers to obtain information that is well-tailored to their needs, as well as professional development and on-the-job assistance.²⁹

United States of America

70% of American workers said they would like to use AI in their work to some extent, according to a new Gartner survey. 54 million new jobs were created from the emergence of personal computers, automated call centers, and industrial machines in the

The Tasks AI Should Take Over (According to Workers)

Share of U.S. workers that would want AI to completely take over the following tasks



n=1,515 U.S. consumers/employees. Conducted October and November 2021. Source: Gartner via VentureBeat



statista

²⁸ South Korea has the greatest density of robot workers. World Economic Forum. (2018, April). Retrieved July 14, 2022, from <https://www.weforum.org/agenda/2018/04/countries-with-most-robot-workers-per-human/>

²⁹ Cho, Y. Y. (2020, February 7). *How is Korea preparing for the jobs of the future and what can we learn from them?* World Bank Blogs. Retrieved July 14, 2022, from <https://blogs.worldbank.org/eastasiapacific/how-korea-preparing-jobs-future-and-what-can-we-learn-them>

25th Annual Session of the **Seoul Model United Nations**

early twenty-first century.³⁰ According to one economist, “North America’s GDP will increase by \$3.7 trillion before 2030 as a result of the expansion of AI.”³¹ Although AI will alter the nature of labor in the future, the effects will vary among countries and industries. A growing income disparity, massive job losses in rural areas, and stratification of educational opportunities and employment opportunities will soon prevail.³²

China

Over the next two decades, AI and associated technologies may replace about 26% of China’s current employment. Still, they may also generate many new ones by increasing productivity and income levels.³³ China is investing a lot in the technology sector. In July 2017, the Chinese government declared its intention to become the global leader in AI by 2030.³⁴ In January 2018, it announced plans to create a \$2.1 billion AI research and development park that will accommodate 400 tech companies.³⁵

The New Generation of Artificial Intelligence Ethics Code is the rules formulated to regulate the responsible use of AI in organizations and businesses in China. This code ensures that the usage of AI will continue to be “under meaningful human supervision.”³⁶

Brazil

Brazil launched an AI policy that aims to balance the technology’s ethical application while fostering research and innovation in the field. The strategy outlines six goals: provide moral guidelines for the ethical application of AI; overcome impediments to innovation; enhance government, business, and academic cooperation; foster investment in technology; and promote Brazilian technology abroad.

³⁰ Muro, M., Maxim, R., & Whiton, J. (2019, January). Automation and Artificial Intelligence. Metropolitan Policy Program. Retrieved July 14, 2022, from <https://www.brookings.edu/wp-content/uploads/2019/11/2019-annual-report.pdf>

³¹ West, D. M., & Allen, J. R. (2022, March 9). How artificial intelligence is transforming the world. Brookings. Retrieved July 14, 2022, from <https://www.brookings.edu/research/how-artificial-intelligence-is-transforming-the-world/>

³² Armstrong, M. (2022). The tasks AI should take over, according to workers. World Economic Forum. Retrieved July 14, 2022, from <https://www.weforum.org/agenda/2022/04/tasks-ai-workers-usa/>

³³ *PWC’s Global Artificial Intelligence Study: Sizing the prize*. PwC. (n.d.). Retrieved July 14, 2022, from <https://www.pwc.com/gx/en/issues/data-and-analytics/publications/artificial-intelligence-study.html>

³⁴ Kharpal, A. (2017, July 21). China wants to be a \$150 billion world leader in AI in less than 15 years. CNBC. Retrieved July 14, 2022, from <https://www.cnbc.com/2017/07/21/china-ai-world-leader-by-2030.html>

³⁵ Kharpal, A. (2018, January 3). *China is building a giant \$2.1 billion research park dedicated to developing A.I.* CNBC. Retrieved July 14, 2022, from <https://www.cnbc.com/2018/01/03/china-is-building-a-giant-2-point-1-billion-ai-research-park.html>

³⁶ Day, K. (2021, October 8). *China unveils AI Ethics code*. Global Government Forum. Retrieved July 14, 2022, from <https://www.globalgovernmentforum.com/china-unveils-ai-ethics-code/>

25th Annual Session of the **Seoul Model United Nations**

Brazil has also endorsed the OECD's five principles for responsible AI: robustness, security, and safety; inclusive growth, sustainable development, and welfare; equity based on human-centered values; and transparency and responsible disclosure.³⁷³⁸

Columbia

Although not nearly as industrialized as many first-world countries such as the United States and Japan, Colombia has also embraced AI. The Latin American state has made numerous efforts in preparation for the AI revolution and has kept abreast of all matters relating to enhancing cybertechnology and Artificial Intelligence in the state. The Ethical Framework for AI provides a series of ethical principles that should be considered in “the design, development, and implementation of AI Systems.”³⁹ The Ethical Framework of the state of Colombia focused on the protection of youths from the negative impacts of this system, ensuring that young people are protected from the possible adverse effects of AI, and providence of skills necessary to shape both the future development of AI technologies and the policies around the technologies. This framework seeks to address the abuse and mishandling of technology and AI in a way detrimental to Colombian society.⁴⁰

Singapore

At the World Economic Forum in Davos in January 2019, Singapore unveiled the first Model AI Governance Framework. The Model Framework's contribution to the conversation on AI ethics is how it transforms moral principles into suggestions businesses can easily follow to use AI ethically. Singapore is encouraged by the variety of enterprises implementing the Model Framework's recommended practices, highlighting how simple they are to employ.

Singapore has released the second edition of the Model Framework to give enterprises clearer and more effective guidelines on how to apply AI responsibly. This edition combines the experiences of organizations that have adopted AI. The original Model Framework is improved for increased relevance and usage by adding new aspects such as robustness and reproducibility. For instance, the discussion of

³⁷ Lowe, J. (2021, April 13). *Brazil launches National AI strategy*. Civil Service & Public Sector News. Retrieved July 14, 2022, from <https://www.globalgovernmentforum.com/brazil-launches-national-ai-strategy/>

³⁸ *The OECD Artificial Intelligence (AI) Principles*. OECD AI. (n.d.). Retrieved July 14, 2022, from <https://oecd.ai/en/ai-principles>

³⁹ Young, S. (2020, June 26). *Council post: Building ethical and responsible AI systems does not start with technology teams*. Forbes. Retrieved July 14, 2022, from <https://www.forbes.com/sites/forbestechcouncil/2020/06/29/building-ethical-and-responsible-ai-systems-does-not-start-with-technology-teams/?sh=25b240855700>

⁴⁰ Budish, R., & Gasser, U. (2021, January 22). *Summary report of expert roundtable on Colombia's Draft AI Ethical Framework*. Berkman Klein Center. Retrieved July 14, 2022, from <https://cyber.harvard.edu/story/2021-01/summary-report-expert-roundtable-colombias-draft-ai-ethical-framework>

interactions and communications with a broader network of stakeholders has been added to the section on customer relationship management. The Model Framework's second edition maintains its technology- and sector-neutral approach, which can complement sector-specific standards and needs.⁴¹

Kenya

In recent years, Kenya has advanced in the field of artificial intelligence, making it one of the few nations that have done so in Africa. However, Kenya appears ill-equipped for the revolution, which is expected to alter how people go about their daily lives fundamentally. The CEIC database indicates that Kenya's unemployment rate increased from 2.6% in 2019 to 2.98% in 2020.⁴² Due to the COVID-19 pandemic, around 1.7 million Kenyans lost their jobs in 2020. The advancement in technology and artificial intelligence will not only exacerbate the rate of unemployment in Kenya but will also impact the unemployment rate worldwide.

Employers in Kenya already consider a lack of skilled labor a significant barrier to their AI operations. A third of the workforce lacks the skills necessary for the evolving workplace. According to a mechanical engineering professor, robots and algorithms may soon be used by businesses to reduce operational expenses. Approximately 50% of all labor tasks in Kenya today can be automated. Kenya's problem is that its higher education institutions have not been able to meet market demands fully. A combination of an antiquated curriculum and little interest in STEM subjects contribute to this.⁴³

Estonia

Estonia revealed in November 2018 that it is creating a legislative framework for AI and a national AI action plan that considers the technology's ethical ramifications, prospective financial incentives, and possible pilot programs. The Personal Data Protection Act, 2019 (EPDPA) governs data privacy in Estonia. The regulatory framework in Estonia addresses data subjects' rights, accountability,

⁴¹ *Remarks by Mr S Iswaran, minister for communications and information, at the Joint Press Conference with World Economic Forum Centre for the fourth industrial revolution on 21 Jan 2020.* Singapore Ministry of Communications and Information. (2020, January 21). Retrieved July 14, 2022, from <https://www.mci.gov.sg/pressroom/news-and-stories/pressroom/2020/1/speech-by-minister-s-iswaran-at-wef-for-the-fourth-industrial-revolution>

⁴² Kenya unemployment rate. Global Economic Data, Indicators, Charts & Forecasts. (n.d.). Retrieved July 14, 2022, from <https://www.ceicdata.com/en/indicator/kenya/unemployment-rate#:~:text=Kenya%20Unemployment%20Rate%20increased%20to,of%202.60%25%20in%20Dec%202019.>

⁴³ Ndege, A. (2020, December 21). *How machines are threatening to take over your job.* Business Daily. Retrieved July 14, 2022, from <https://www.businessdailyafrica.com/bd/data-hub/how-machines-are-threatening-to-take-over-your-job-2194878>

25th Annual Session of the **Seoul Model United Nations**

purpose-limitation principles, and the requirement to obtain consent before collecting and processing personal data.

Estonia's artificial intelligence strategy released in 2019 does not provide much of a roadmap to tackle the ethical challenges raised by the technology. Yet, the country is guided by the reports of Estonia's Task Force on AI released in May 2019 that briefly explains the general connections and principles resulting from EU Laws. As per the reports, various areas of fundamental rights should be considered above all with regard to artificial intelligence. These fundamental rights are the right to humanity, the right to equality, non-discrimination, etc.⁴⁴

Czech Republic

Artificial intelligence is a widely-discussed topic in the Czech Republic. Experts, governments, governments, and other stakeholders acknowledge the importance of AI research, development, and utilization. Since 2017, the Czech Republic has made a significant effort to advance the legal analysis of artificial intelligence nationally and internationally.⁴⁵

In 2018, the Office of the Government of the Czech Republic also initiated extensive research on the development potential of AI. The study produced three specialized papers, one of which is about the legal and ethical aspects of AI development and its applications.⁴⁶

Turkey

President Recep Tayyip Erdogan of Turkey wrote in the prologue of the National Artificial Intelligence Strategic Plan report that “the field of artificial intelligence is not a matter of choice, but one of the biggest bearers of our growth goals.”⁴⁷

⁴⁴ Estonia: Government Issues Artificial Intelligence Report. The Library of Congress. (2019, July 31). Retrieved July 14, 2022, from [https://www.loc.gov/item/global-legal-monitor/2019-07-31/estonia-government-issues-artificial-intelligence-report/#:~:text=\(Estonia%20Accelerates%20Artificial%20Intelligence%20Development,6%2C400%20\(approximately%20US%247%2C200\).](https://www.loc.gov/item/global-legal-monitor/2019-07-31/estonia-government-issues-artificial-intelligence-report/#:~:text=(Estonia%20Accelerates%20Artificial%20Intelligence%20Development,6%2C400%20(approximately%20US%247%2C200).)

⁴⁵ Hendrych, L. (2020, October 30). Czech Republic wants to be AI leader, but companies lack state support. www.euractiv.com. Retrieved July 14, 2022, from <https://www.euractiv.com/section/digital/news/czech-republic-wants-to-be-ai-leader-but-companies-lack-state-support/>

⁴⁶ AlzbetaKrausova, - by. (2020, August 2). Activities of the Czech Republic in AI Regulation. AI Observatory and Forum. Retrieved July 14, 2022, from <http://observatory.ilaw.cas.cz/index.php/2020/02/08/activities-of-the-czech-republic-in-ai-regulation/>

⁴⁷ TRT World. (2021, August 24). Turkey's AI roadmap looks to boost economy and add thousands of Jobs. TRT World Magazine. Retrieved July 14, 2022, from <https://www.trtworld.com/magazine/turkey-s-ai-roadmap-looks-to-boost-economy-and-add-thousands-of-jobs-49435>

The Turkish government's AI strategy strongly emphasizes ethical principles and human rights. As part of this strategy, Turkey has obligations to develop an ecosystem based on production and sustainability to complete the framework for data access and sharing, increase the efficiency of all businesses and business processes in the public sector, and sustain this ecosystem by raising and educating new generations.⁴⁸

Suggested Solutions

Regulating the ethical use and development of AI in the workplace should start with creating ethical principles applicable to businesses and private sectors. A framework must be in place to ensure that the AI utilized by corporations is ethical. For instance, Amazon quickly stopped using its hiring algorithm that displayed prejudice in favor of male candidates when the subject of the boundaries of ethical AI arose. The AI was programmed using historical data, which showed that hiring decisions favored male applicants, so the system did the same.

The procedures for creating ethical AI can differ depending on how firms operate and are structured. The European Commission established the fundamental steps in the report "Ethics Guidelines for Trustworthy AI." The report says that preventing hidden biases involves ensuring human oversight, explaining how statistics-based machine learning models operate, building AI systems resistant to adversarial attacks, following transparent data gathering and processing procedures, and ensuring datasets are inclusive.⁴⁹

In addition, a national AI observatory should be established to keep an eye on AI systems; adherence to ethical, legal, and regulatory compliance. The world's AI observatories serve as vital coordination and communication centers for the field. They generate and collect common knowledge about AI, identify and promote best practices, and link researchers and other interested parties who want to create an ecosystem for AI. A reliable AI ecosystem would position the nation as a significant global player supporting a human-centered approach to AI. The research accumulated would be disseminated to the public and private companies.

⁴⁸ Güner, Ş. (2020, March 4). Experts to map out Turkey's strategy on AI centered on ethics and data protection. Daily Sabah. Retrieved July 14, 2022, from <https://www.dailysabah.com/life/experts-to-map-out-turkeys-strategy-on-ai-centered-on-ethics-and-data-protection/news>

⁴⁹ Memon, M. (2022, July 15). What does ethical AI mean for your business? Leivity. Retrieved July 16, 2022, from <https://leivity.ai/blog/ethical-ai-for-business>

25th Annual Session of the **Seoul Model United Nations**

The observatory would be run by individuals who can monitor AI systems for ethical, legal, and regulatory compliance. In spite of the fact that AI is predicted to eliminate more than 75 million jobs in the upcoming years, 133 million new posts will be created, according to the 2018 Future of Jobs Report from the World Economic Forum. Human-specific abilities such as understanding others, effectively communicating, and trust-building will be crucial in promoting and overseeing the ethical development of AI systems.⁵⁰ The observatory will base the development of AI on ethics, transparency, security of users, robust control, and resilience. It will map out who produces knowledge and where people are developing AI, innovate research about evidence-based AI, and equip the next generations with the skills they need to master.⁵¹

National AI observatories may later collaborate on both national and international levels. International partnerships happen when each country is represented by at least one user who has made at least one contribution to the project. When two users from the same nation work together on a project, domestic collaboration takes place. These collaborative efforts can form a network of countries to initiate projects to enhance human skills training and AI development.⁵²

Furthermore, schools and companies should consider providing students and employees with the tools they need to reskill in areas such as understanding conversational AI and machine learning. This investment creates a positive company culture and reduces turnover by boosting employees' confidence and productivity, ultimately increasing effectiveness. Jamie Dimon, the CEO of JPMorgan, said, "Our most important asset — far more important than capital — is the quality of our people. Technology always drives change, but now the waves of technological innovation come in faster and faster."⁵³

It is known that increased unemployment has a detrimental effect on society; it leads to less volunteerism, increased crime, and drug misuse. If nations do not effectively prepare, a period of high unemployment, in which tens of millions of people are unable to acquire a job because they just do not

⁵⁰ Cage, R. (2021, May 18). The Ethical Workplace & Artificial Intelligence. Bird & Bird. Retrieved July 16, 2022, from <https://www.twobirds.com/en/insights/2021/global/the-ethical-workplace-and-artificial-intelligence>

⁵¹ Diniz, V. (2020, June 10). Brazil should have a national artificial intelligence observatory. This is what it should look like. OECD.AI. Retrieved July 16, 2022, from <https://oecd.ai/en/wonk/brazil-should-have-a-national-ai-observatory-this-is-what-it-should-look-like>

⁵² Domestic and international collaboration in AI software development. OECD.AI. (n.d.). Retrieved July 16, 2022, from <https://oecd.ai/en/data?selectedArea=ai-software-development&selectedVisualization=domestic-and-international-collaboration-in-ai-software-development>

⁵³ Junta Nakai, D. (2022, May 24). Ai reskilling: A solution to the worker crisis. VentureBeat. Retrieved July 20, 2022, from <https://venturebeat.com/2022/05/24/ai-reskilling-a-solution-to-the-worker-crisis/>

have the appropriate skills, will be the reality.⁵⁴ Citizens and the government alike should accept that learning does not stop with formal education. Due to the exponential acceleration of the digital transition, learning must be a lifetime endeavor, requiring ongoing reskilling to keep up with a constantly changing world.

In the new era of intelligent automation, policymakers must re-evaluate how markets, businesses, and employment agreements should function. They need to restructure the social processes to accommodate a variety of new scenarios and situations. They should create a solid framework to prevent the uneven concentration of technological power and control at an even higher level.

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⁵⁴ McClelland, C. (2022, March 28). The impact of artificial intelligence - widespread job losses. IoT For All. Retrieved July 16, 2022, from <https://www.iotforall.com/impact-of-artificial-intelligence-job-losses>

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