

Can Artificial Intelligence Execute an Entire Job Role Independently

Problem statement

Fears of job losses are growing daily among many employees around the world, directly proportional to the advancement of technological sciences, particularly in the field of artificial intelligence and its associated technologies.

This is particularly true with the emergence of software tools that cover most areas of the labor market.

If we look back hundreds of years, there were many professions that completely disappeared, and this technology deprived those who worked in those professions of continued profit. Evidence abounds in search engines.

This is not a new phenomenon; it will continue as long as humans remain creative, developing, and learning.

This adoption of artificial intelligence has led to many employees losing their jobs, or being laid off partially or completely.

The possibility of jobs being replaced by artificial intelligence and robots was evaluated, and it was confirmed that 47% of jobs in the United States will become non-existent in the next two decades.

These jobs were also classified based on the complexity of their implementation and the possibility of transforming them into an automated form.

The study concluded that the risk of laying off employees with tasks that can be automated or involve routine, routine tasks was higher.

Employees with complex tasks that require complex decision-making were more likely to be laid off.

Robots struggled to navigate unstructured environments or those that required precise tasks, or to simulate complex human interactions such as negotiating with and convincing customers. Artificial intelligence cannot generate valuable new ideas without human guidance and interaction.

(Carl Benedikt Frey & Michael A. Osborne -2013)

In a related context, a survey conducted on the impact of artificial intelligence on the labor market and various job positions in 2030 was conducted. Opinions were divided between fear and optimism regarding this move.

Pessimists and those fearful of this transformation accounted for 37% of the vote, while 63% expressed acceptance of the situation and believed that life would become better in various aspects.

Research and opinion polls also confirmed concerns about bias and racial discrimination, for example, in the selection of employees during job applications due to the algorithms that will be adopted by companies later.

(Pew Research Center-2018)

Many entities are capitalizing on this boom in development to serve their interests in local markets.

This is encouraging, as a study confirms that artificial intelligence will create 20-50 million new jobs by 2030.

By 2025, 75 million jobs may be lost but 133 million new jobs will be created (World Economic Forum).

A skills gap may occur, as learning additional and advanced skills and approaches is required to keep pace with these developments (such as machine learning and data analysis).

A number of professions have been classified as "vulnerable to unemployment," such as manufacturing, accounting, and administrative services. Other professions less impacted by this development include social and healthcare, education, and creativity.

The key to success is adapting, continuously learning, and leveraging technology to enhance human capabilities. (Robert Farrel 2022).

In a scientific journalistic analysis based on interviews with researchers and experts from technology companies and universities about the possibility of human job losses due to automation and artificial intelligence, the authors of this analysis cited how a computer was able to defeat the most skilled and famous chess players in a few professional moves, to later confirm the machine's ability to accomplish difficult tasks.

As the population grows (9.8 billion by 2050), the labor market will become more competitive, and artificial intelligence will not completely replace humans,

but it will change the nature of jobs and increase economic inequality.

The key to survival is adaptation, continuous learning, and smart policies that ensure everyone shares in the benefits of technology.

(Will robots and AI cause mass unemployment? Not necessarily, but they do bring other threats)

Among these positions, the cadres and employees will be partially or completely dispensed with later or in the near future.

Through research, there are several examples of functions that AI technologies can perform completely without human intervention:

1- Data Analysis and Reporting

AI can process massive amounts of data, extract patterns, and prepare financial or statistical reports without human intervention.

Examples: Tools like ChatGPT for text analysis or Tableau for automated data visualization.

2- Automated Customer Service (Advanced Chatbots)

Some companies use intelligent chatbots (such as Zendesk Answer Bot) to answer customer inquiries completely without human intervention.

3- Proofreading and Machine Translation

Online tools like Grammarly correct and translate texts with high accuracy without the need for human editors.

4- Digital Trading and Reading Stock Market Values

AI systems, such as high-frequency trading algorithms, make buy and sell decisions on stock exchanges without human intervention.

5. Giant factories containing machines that manufacture products using smart robots.

"Lights-out" manufacturing factories are entirely powered by robots and artificial intelligence, such as some Tesla and BYD factories in China.

On the other hand, there are examples of jobs that are difficult for AI to perform entirely (at the moment):

1. Creative jobs (novel writing, original artistic design).

When trying to generate stories or novels using AI, the results are repetitive, with inconsistent and sloppy phrases, despite the precision of the wording and correct spelling.

2. Complex healthcare (diagnosing rare diseases, microsurgery).

There are complex cases that require human medical intervention (explained previously).

3. Empathy-based jobs (psychotherapist, child educator).

4. Strategic management jobs (making complex corporate decisions).

Research Objective

This academic study focuses on proving the potential of certain AI technologies to fully perform human tasks in a professional manner and ensure good results.

Here I discuss the potential of AI to accomplish assigned tasks in a way that eliminates the need for humans to follow up on the tasks:

- 1- To incorporate artificial intelligence into existing job roles to enhance efficiency and reduce human error, which contributes to the practical integration between artificial intelligence and humans to improve performance.
- 2- To develop AI-driven frameworks that can autonomously perform specific job functions with minimal, it is about technical innovation to enable intelligent systems to operate almost independently of human intervention in almost all processes.
- 3- To assess the impact of AI automation on employment trends, job displacement, and workforce reskilling needs, to study the social and economic aspects of automation
- 4- To create guidelines for businesses and policymakers on integrating AI into workplaces while ensuring ethical and equitable outcomes, to ensure that practical applications of artificial intelligence are capable of handling responsibilities and continuing to operate under the most difficult and unforeseen circumstances.

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