

EVALUATION OF THE FUTURE OF WORKING LIFE: REFLECTION OF ARTIFICIAL INTELLIGENCE TECHNOLOGIES ON WORKING LIFE

Çalışma Yaşamının Geleceğine İlişkin Değerlendirme: Yapay Zeka Teknolojilerinin Çalışma Hayatına Yansımaları

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ABSTRACT

The paper provides explanations of the reflection of artificial intelligence in working life. It also contributes to the literature by evaluating the link between the future of working life and artificial intelligence. Artificial intelligence (AI), which is a result of technological developments, work life and workforce were also affected. Artificial intelligence, which is used in different business lines such as health, finance and transportation, seems to continue to be used in different business lines day by day. With the use of artificial intelligence in working life, the work and procedures have gained speed and have become easier in many ways. In the introduction part of the study, information was given about the history of artificial intelligence, and in the next section, the use of artificial intelligence in working life was emphasized. As a result and evaluation, the differences between machines and humans are mentioned, and it has been evaluated that artificial intelligence is used in various business lines and will become more widespread in the future.

Key Words: Artificial intelligence, technology, innovation, working life, labour.

ÖZET

Çalışma, yapay zekânın çalışma hayatına yansımalarına ilişkin açıklamalar yapar iken çalışma hayatının geleceği konusunda bağlantı kurarak literatüre katkı sağlamaktadır. Teknolojik gelişmelerin bir çıktısı olan yapay zekâdan (AI), çalışma hayatı ve işgücü de etkilenmiştir. Sağlık, finans ve ulaştırma gibi farklı iş kollarında kullanılan yapay zekâ, her geçen gün farklı iş kollarında kullanılmaya devam edecek gibi görünmektedir. Yapay zekânın çalışma hayatında kullanılmasıyla, iş ve işlemler hız kazanarak birçok yönden daha kolay hale gelmiştir. Çalışmanın giriş kısmında yapay zekânın geçmişi konusunda bilgilendirme yapılmış, daha sonraki kısımda yapay zekânın çalışma hayatında kullanımı üzerinde durulmuştur. Sonuç ve değerlendirme olarak makineler ile insanlar arasındaki farklılıklara değinilirken yapay zekânın çeşitli iş kollarında kullanıldığı ve gelecekte daha da yaygınlaşacağı değerlendirilmiştir.

Anahtar Kelimeler: Yapay zekâ, teknoloji, inovasyon, çalışma hayatı, işgücü.

1. INTRODUCTION

Artificial Intelligence (AI) is the experimental and theoretical study of perceptual and intellectual processes by using computers. Its ultimate aim is to understand these processes as well as a computer can only perceive, understand and activate as much as possible for humans (Earnest, 1973).

In this context, artificial intelligence is a scientific discipline aiming to produce machines that can fulfil many tasks that require human intelligence. AI has developed until today thanks to technological developments; it has started to use in the production and service sector by affecting the labour markets. In the rapidly changing world of the 21st century, it is thought that the spread and development of artificial intelligence in the business life will be so fast.

2. HISTORY OF ARTIFICIAL INTELLIGENCE

The concept of "Computing Machinery and Intelligence" was published in Mind magazine in 1950, while there was another 6 years of use of artificial intelligence as a concept. The concept of "artificial intelligence" was first used in 1956 at the Dartmouth Conference by John McCarthy (Acar, 2007). With the use of this concept, scientists have been involved in various studies since 1956, which was accepted as the beginning of artificial intelligence. The first international conference on artificial intelligence was held in 1969 and the robotic arm developed in 1971 was able to fulfil commands spoken in English (Acar, 2007).

In this context, the technology that started to automate has developed over the years and has become capable of overcoming the problems (Şen and Yurtoğlu,2020).

3. USING ARTIFICIAL INTELLIGENCE IN WORKING LIFE

The report of International Labour Office (ILO), which is titled "Global Employment Trends for Youth 2020: Technology and the Future of Jobs", evaluates that technological developments are an opportunity for developing countries to skip old technologies and enter a new development path. Moreover, it is noted that developing countries can turn technological advances into an advantage. The report underlined that the macroeconomic policy framework is an area that requires urgent action, so that it should be reconsidered in light of technological developments. In the report, the macroeconomic policy framework is an area that requires urgent action.

The report underlined that the macroeconomic policy framework is an area that requires urgent action, so that it should be reconsidered in light of technological developments. In addition, the report states that in relation to artificial intelligence, it is used in Belgium to match job offers based on the skills, locations and preferences of job seekers, and there is an application called "digital consultant" to help school leavers improve their job interview skills through online teleconference sessions (ILO, 2020).

Artificial intelligence is a system that can think like a human being. As shown in Figure 1 (Cotter and Smyth, 2000), the series or films viewed from certain applications are categorized according to the type and make use of the content viewed in the past for the next series/film proposal. So companies offer their customers content that they can love with this kind of personalized method.

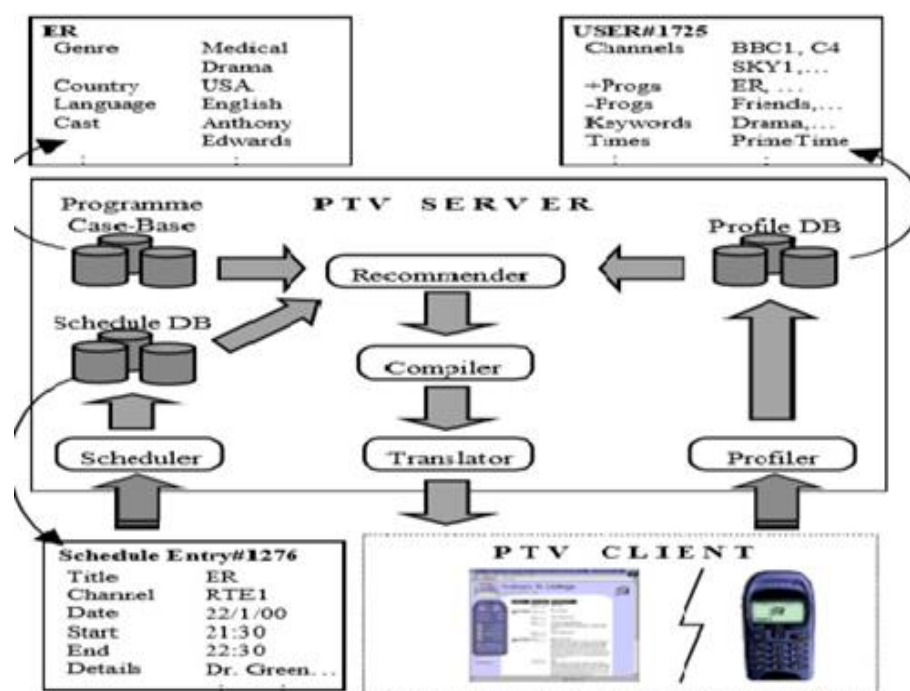


Fig. 1. An Overview of The PTV (A Java-Based Client-Server System) System Architecture.

Apart from the Intelligent Personalised TV guides, artificial intelligence is now used in a variety of professions as well. The use of artificial intelligence in the accounting and Auditing Professions (Marr, 2018):

- ✓ Processing of debtor / creditor accounts: There are already artificial intelligence-supported invoice management systems that can make invoice processing more fluid thanks to the digital workflows implemented. They can learn the accounting codes that will be appropriate for each invoice.
- ✓ Supplier selection: Machines can renew their suppliers by checking their credit ratings or tax information and query portals to get all the necessary information without human intervention.
- ✓ Purchasing: Most organizations deal with a lot of paperwork in the purchasing process and use different systems and files that are not compatible with each other. Since the machines can be integrated through applications and unstructured data can be processed, the supply system will eventually become paperless. Robots are ideal for tracking price changes among many suppliers.
- ✓ Audits: Digitizing the audit process, leaving a digital mark on when and to whom each file is accessed will help increase assurance. Instead of searching for file cabinets for documents required during an audit, auditors will be able to use digital file benefits. A more digital audit improves the efficiency and accuracy of audits and controls 100% of a company's financial transactions instead of sampling.
- ✓ Process of closing accounts: The faster the numbers can be taken, the more time organizations will need to think strategically about what to do with these numbers. Machines can receive, combine and reconcile data from many sources. The monthly / quarterly account closing process will not only accelerate, but will also be more accurate thanks to the support of the machines in the process.
- ✓ Expense management: It is quite time consuming for the accounting team to review and approve spending in accordance with the organization's policies. The machines can read receipts, inspection costs, and alert people when a potential violation occurs.
- ✓ AI chat tools: Chat tools are used to effectively solve questions or problems from customers. These include, such as invoices, maturity inquiries, account balances and more.

In addition to the financial sector, AI is utilized in healthcare. A study has been published in the journal *Annals of Oncology* that AI is now able to diagnose skin cancer more accurately than experts (Uzun,2020). Forbes reported that there were more than 70 thousand new cases of lung cancer in China in April 2017 compared to 2015, and there has been 80 thousand radiologists in China who perform 1.4 billion radiology scans a year. Radiologists at Shanghai Changzheng Hospital in China use artificial intelligence technology. Prof. Regina Barzilay and her group are collaborating with Massachusetts General Hospital to develop applications in the field of artificial intelligence to improve the cancer diagnosis and treatment process. AstraZeneca, based in Cambridge, England, is working with bio-pharmaceutical company Berg, based in Boston, Massachusetts, to find biological markers and drugs for the neurological disease. Genentech, a California-based Roche subsidiary, uses the Cambridge platform, with Massachusetts-based GNS Healthcare, its artificial intelligence platform to analyse oncology treatments. Japanese pharmaceutical company giant Takeda has partnered with Numerate, a California-based artificial intelligence company. In the summer of 2017 in Brentford, England, it was announced that it was collaborating with Scottish AI specialist Exscientia to explore targets for up to 10 diseases and testing Zhavoronkov's Insilico Medicine algorithms (Büyükgoze, Dereli, 2019). According reporting of CBInsights, leading pharmaceutical companies such as Pfizer, Novartis, Sanofi, GlaxoSmithKlein, Amgen and Merck have announced partnerships in recent months with AI

initiatives aimed at discovering new drug candidates for a range of diseases from oncology and cardiology (Uzun,2020).

The use of artificial intelligence in disability; a mobile application based on artificial intelligence has been mentioned. By using the mobile application which is developed for transportation of blind people, transportation planning can be made and all the values needed by the disabled people can be learned. Location of transportation vehicles with equipment for the disabled people, equipment status, stops and movement times of the vehicles can be found in this application. The disabled people can reach where he / she wants to go with the help of the information he / she has accessed from this application (Uzun and Hakverdi, 2019). Moreover, artificial intelligence technologies are used in the application OTSIMO, which is developed for the education of children with autism. This application is based on “ABA: Applied Behavior Analysis”, which provides control to families. Through the games in the application, specific statistics are created and recommendations are given according to the child's style (Uzun,2020).

As mentioned by Vural and Ozgobek (2017), technological developments are also so important in elderly care that encouraging development of convenient technology and supporting innovative approaches to facilitate the life of the elderly adopted by Turkey.

Moreover, AI can be used in agricultural activities. Manufacturers of large agricultural machinery in the United States have started to incorporate artificial intelligence companies into their bodies. Diagnosing weeds progress is being made on issues such as the production of artificial intelligence agricultural tools that will only apply pesticides to that region (Aldağ and Eker, 2018).

4. DISCUSSION AND CONCLUSION

With this article, it is studied that the areas in which artificial intelligence is used in working life and contributed to literature by trying to show the future of AI. In these areas, it is aimed to give general information about the current situation of the working life and the direction of its future by explaining examples of applications in order to contribute to the readers and researchers in terms of getting ideas.

The fact that people and machines work differently that while people demonstrate leadership, teamwork, creativity and social skills, machines will demonstrate their speed, scalability and quantitative skills. While things that people can do naturally, such as making jokes, jokes can be difficult for machines. Besides, it is impossible for people to analyze gigabytes of data easily. Business world needs both skills. In a study involving 1,075 companies from 12 industries, it was found that companies with better artificial intelligence initiatives achieved better results in speed, cost savings, income and other operating criteria (Wilson and Daugherty, 2018: 81).

Especially, it is thought that artificial intelligence can come to the forefront in conducting business based on rules. While it remains unclear how technological developments will take shape in the future, it is anticipated that artificial intelligence technologies capable of accounting, producing in a factory, analysing people's faces and micro expressions, judging people, diagnosing diseases, operating surgery will have a considerable impact on employees in business life. In this context, it is also necessary to talk about when AI systems can harm people and how we can eliminate them by focusing on the accountability gap of AI. For this reason, it is important how the Earth will position itself while exciting technological developments. It is thought that technological developments should include and serve the purpose of causing good results for world welfare.

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