

## Artificial intelligence and its use in various fields in everyday life

Вінницький національний технічний університет

### Анотація

В статті йдеться про швидкий технічний розвиток, про поняття штучного інтелекту, приклади застосування ШІ в різних галузях сьогодення та його загальний вплив на повсякденне життя.

**Ключові слова:** штучний інтелект (ШІ), технології, чатботи, розумні пристрої, пошукова система, машинне навчання.

### Abstract

This article discusses the rapid technological development, the concept of artificial intelligence, examples of AI application in various industries, and its overall impact on everyday life.

**Keywords:** artificial intelligence (AI), technology, chatbots, smart devices, search engine, machine learning.

### Introduction

In recent years, there has been a significant increase in the speed of technological advancements and their widespread use. As a result, these rapid technological changes are impacting nearly every aspect of our daily lives, as well as the economy society, and culture [1].

Artificial intelligence (AI) is a wide-ranging branch of computer science concerned with building smart machines capable of performing tasks that typically require human intelligence. While AI is an interdisciplinary science with multiple approaches, advancements in machine learning and deep learning, in particular, are creating a paradigm shift in virtually every sector of the tech industry [2].

AI is used extensively across a range of applications, with varying levels of sophistication. Recommendation algorithms that suggest what you might like next are popular AI implementations, as are chatbots that appear on websites or in the form of smart speakers (e.g., Alexa or Siri). AI is used to make predictions in terms of weather and financial forecasting, to streamline production processes, and to cut down on various forms of redundant cognitive labor (e.g., tax accounting or editing). AI is also used to play games, operate autonomous vehicles, process language, and much, much, more [3].

The implementation of artificial intelligence in the workplace has the capacity to significantly enhance productivity and broaden the scope of tasks that humans can perform. By delegating repetitive or hazardous duties to AI, it enables humans to focus on activities that align with their unique skills, such as those involving creativity and empathy. Ultimately, this transition to more meaningful tasks can lead to a boost in job satisfaction and overall happiness for workers. Thus, artificial intelligence is only increasing its role in our lives every day, and the number of industries where it is used is growing.

### Areas with the largest use of artificial intelligence

#### 1. Chatbots

At this point in time, all of us are accustomed to using various chatbots on the Internet. Whether it is something as simple as a customer service bot to one that talks like a human, there are bots of all kinds. However, did you know a lot of the bots you have been using are actually examples of artificial intelligence?

A prominent example of this is ChatGPT. People started out using this chatbot as just another online companion. However, you'll be surprised to know that, ChatGPT is actually an artificial intelligence-powered chatbot. ChatGPT is powered by OpenAI's large language model (GPT 3). The company has also released a newer model titled GPT-4, an LLM available to Plus users.

The bot has been designed to mimic human-like responses and perform a variety of tasks. While people initially used the chatbot for simple conversations, it quickly turned out that ChatGPT is capable of doing just about anything online.

The AI chatbot can write blog posts, generate and debug complex code, weave vivid stories, give recipes, and answer almost any question you would ask it. This lends ChatGPT a lot of power to help with anything. ChatGPT is even getting Internet access soon with OpenAI releasing plugins for it. The next time you go

about using ChatGPT or its alternatives, do remember that it is one of the best examples of artificial intelligence in 2023. And if you already use it, check out these cool things you can do with ChatGPT and be amazed [4].

## **2. Smart Devices**

Many of the smart home products use artificial intelligence to learn our habits and automatically modify settings to make our experience as seamless as possible. It may take a while to have a perfect AI-powered house but some steps will take us there. For example, there are smart thermostats that change the temperature according to your preferences, as well as smart lights that alter the color and intensity of lights based on time. It won't be long before our primary interactions with all of our smart home gadgets are conducted entirely through AI [5].

## **3. Finance services**

Banks are one of the domains that have adopted technological inventions sooner than most other fields. Banking has now moved on from the need to go to a physical space to conduct the operations from your mobile.

Banks use AI in many areas, including detecting any fraudulent activity, analyzing the investment trends of customers, providing customer services, etc.

Have you ever received a notification from a bank when you do a transaction from a new device? This is a case of AI being used to detect any potential fraud. The notifications received from banks & financial institutions regarding their services and products are examples of AI in understanding your preferences, requirements, and financial strength to suggest relevant products [6].

## **4. Security and Surveillance**

It is practically hard for a human to keep a continual check on many CCTV network monitors at the same time. As a result, we've felt compelled to automate such monitoring operations and improve them using machine learning approaches.

Artificial Intelligence frees up human surveillants to focus on verifying and responding to critical situations. AI video monitoring software handles the ongoing monitoring and detection aspect of surveillance. You could ask, Why do we need Artificial Intelligence if humans could perform the same task effortlessly? The reason is Artificial intelligence can detect abnormal activity that human eyes may overlook.

Surveillance systems in high-risk public venues, such as government buildings, use an extension of AI-based facial recognition software. At the moment, liberal governments are attempting to mitigate the possibility of privacy breaches as a result of AI spies [7].

## **5. AI Image Generators**

After reading the above, you must already be aware of the power of AI when it comes to visual media. While features like OCR scanning can intelligently convert real word objects to text, AI integration in portrait mode helps frame better pictures. However, did you know that you can actually generate full-fledged images through AI in 2023? The advent of AI has actually resulted in image creation being very easy. Users still need imagination but now it's to come up with prompts for AI image generators. These generators use a combination of AI technologies to intelligently create a wide variety of images.

As mentioned, the generators only require prompts and hence are limited by our own imagination. AI image generators like Midjourney are amazingly excellent at coming up with vivid and beautiful images. As you can see above, these AI-created images are on par and in some cases surpass images created by artists. If the same trend continues, expect AI to one day rival the creative industry. However, until that happens there are a lot of these generators around. Check out these best AI art generators and try them out yourself [4].

## **6. Criminal justice**

AI is being deployed in the criminal justice area. The city of Chicago has developed an AI-driven "Strategic Subject List" that analyzes people who have been arrested for their risk of becoming future perpetrators. It ranks 400,000 people on a scale of 0 to 500, using items such as age, criminal activity, victimization, drug arrest records, and gang affiliation. In looking at the data, analysts found that youth is a strong predictor of violence, being a shooting victim is associated with becoming a future perpetrator, gang affiliation has little predictive value, and drug arrests are not significantly associated with future criminal activity.

However, critics worry that AI algorithms represent "a secret system to punish citizens for crimes they haven't yet committed. The risk scores have been used numerous times to guide large-scale roundups." The fear is that such tools target people of color unfairly and have not helped Chicago reduce the murder wave that has plagued it in recent years.

Despite these concerns, other countries are moving ahead with rapid deployment in this area. In China, for example, companies already have “considerable resources and access to voices, faces and other biometric data in vast quantities, which would help them develop their technologies.” New technologies make it possible to match images and voices with other types of information, and to use AI on these combined data sets to improve law enforcement and national security. Through its “Sharp Eyes” program, Chinese law enforcement is matching video images, social media activity, online purchases, travel records, and personal identity into a “police cloud.” This integrated database enables authorities to keep track of criminals, potential law-breakers, and terrorists. Put differently, China has become the world’s leading AI-powered surveillance state [8].

### **7. Health care**

AI tools are helping designers improve computational sophistication in health care. For example, Merantix is a German company that applies deep learning to medical issues. It has an application in medical imaging that “detects lymph nodes in the human body in Computer Tomography (CT) images. According to its developers, the key is labeling the nodes and identifying small lesions or growths that could be problematic. Humans can do this, but radiologists charge \$100 per hour and may be able to carefully read only four images an hour. If there were 10,000 images, the cost of this process would be \$250,000, which is prohibitively expensive if done by humans.

What deep learning can do in this situation is train computers on data sets to learn what a normal-looking versus an irregular-appearing lymph node is. After doing that through imaging exercises and honing the accuracy of the labeling, radiological imaging specialists can apply this knowledge to actual patients and determine the extent to which someone is at risk of cancerous lymph nodes. Since only a few are likely to test positive, it is a matter of identifying the unhealthy versus healthy node.

AI has been applied to congestive heart failure as well, an illness that afflicts 10 percent of senior citizens and costs \$35 billion each year in the United States. AI tools are helpful because they “predict in advance potential challenges ahead and allocate resources to patient education, sensing, and proactive interventions that keep patients out of the hospital [8].

### **8. Face detection**

Face detection is one of the most popular uses of Artificial Intelligence in our daily life. It uses the Image Processing technology of Artificial Intelligence to identify faces with the help of distance between two eyes, shape of the face, edges, and other features. This face ID unlock feature is commonly seen in the smartphones of today.

Face recognition software is using Generative Adversarial Neural Networks (GANN) to lower the margin of error. These neural networks are also being honed to detect fraudulent use of Deepfake technology. AI software, that detects facial expressions to determine mood and intent is also being developed by several sectors. Emotion AI or Affective Computing is a growing field of study for assessing client satisfaction [7].

### **9. Travel & Navigation**

We might have used navigation services or others to find our way through at some point in our lives. For many, it is part of their daily lives. Whether using maps for navigation or using a taxi-hire service like Uber, you are using AI-enabled services to travel from one place to another.

Google, Apple, and many other navigation-related service providers utilize AI to interpret the scores of information being received and provide you with information that helps in navigation and get live traffic updates, allowing you to commute more efficiently. There are plenty of [Geocoding and Maps API](#) available to convert an idea into reality [6].

### **10. Video games**

Various components driven by AI or similar applications may be found in a wide range of video games, including racing games, shooting games, and strategy games. The fundamental goal of incorporating AI into gaming is to provide a realistic gaming experience for players to compete on a digital platform. Some companies are currently developing computer games with the goal of studying their patterns in order to improve their algorithms [5].

## **Conclusion**

In summary, it is undeniable that artificial intelligence is having a significant impact on our lives, from the personalized recommendations we receive on our social media platforms to the autonomous vehicles that are being developed for our roads. The capabilities of AI are expanding at an incredible rate, and its potential applications in various fields are endless. As we continue to rely more and more on AI, its impact will only

continue to grow. However, with this increased reliance comes the need for responsible and ethical development to ensure that AI is used to benefit humanity as a whole. As such, it is clear that artificial intelligence will continue to play a pivotal role in shaping our society and daily lives in the years to come.

#### СПИСОК ВИКОРИСТАНОЇ ЛІТЕРАТУРИ

1. The impact of rapid technological change on sustainable development. URL: [https://unctad.org/system/files/official-document/dt1stict2019d10\\_en.pdf](https://unctad.org/system/files/official-document/dt1stict2019d10_en.pdf)
2. What Is Artificial Intelligence? URL: <https://builtin.com/artificial-intelligence>
3. Artificial Intelligence: What It Is and How It Is Used. URL: <https://www.investopedia.com/terms/a/artificial-intelligence-ai.asp>
4. 18 Examples of Artificial Intelligence You're Using in Daily Life in 2023. URL: <https://beebom.com/examples-of-artificial-intelligence/>
5. Artificial Intelligence in Daily Life with Examples. URL: <https://becominghuman.ai/artificial-intelligence-in-daily-life-with-examples-a363502086ff>
6. 10 Examples of Artificial Intelligence (AI) in our Daily Lives. URL: <https://geekflare.com/daily-life-ai-example>
7. The Importance Of Artificial Intelligence In Everyday Life. URL: <https://www.fita.in/the-importance-of-artificial-intelligence-in-everyday-life/>
8. How artificial intelligence is transforming the world. URL: <https://www.brookings.edu/research/how-artificial-intelligence-is-transforming-the-world/>

**Лавренюк Арсен Олександрович** – студент 1 курсу Вінницького національного технічного університету, факультету інформаційних технологій та комп'ютерної інженерії, групи ІПІ-22б, Вінниця, e-mail: [arsenchikprog@gmail.com](mailto:arsenchikprog@gmail.com).

Науковий керівник: **Кухарчук Галина Вікторівна** — викладач кафедри іноземних мов, Вінницький національний технічний університет, м. Вінниця, e-mail: [galinakuh07@gmail.com](mailto:galinakuh07@gmail.com).

**Lavreniuk Arsen Oleksandrovich** — 1st year student of Vinnytsia National Technical University, Faculty of Information Technology and Computer Engineering, Group 1PI-22b, Vinnytsia, e-mail: [arsenchikprog@gmail.com](mailto:arsenchikprog@gmail.com).

Supervisor: **Kukharchuk Galyna Viktorivna** – an Assistant Professor of Foreign Languages Department, Vinnytsia National Technical University, Vinnytsia, e-mail: [galinakuh07@gmail.com](mailto:galinakuh07@gmail.com).