

## References

1. Mobile Testing Tools in 2023 [Электронный ресурс] - URL: <https://appium.io/docs/en/2.0/> (дата звернення: 27.05.2023)
2. Appium Documentation [Электронный ресурс] - URL: <https://appium.io/docs/en/2.0/> (дата звернення: 27.05.2023)

## **HOW THE UKRAINIAN IT SPHERE WITHSTANDS PRESSURE FROM RUSSIAN INVASION**

*Novoseltsev I. I., student,*

*Suknov M.P., PhD, Associate Professor,*

*Kharkiv National University of Radio Electronics*

The Ukrainian IT sphere has emerged as a resilient and innovative industry, facing significant challenges in the wake of the ongoing Russian invasion. This article explores how Ukraine's IT sector has managed to withstand the pressure and continue to thrive despite the political and military turmoil. By examining the resilience, talent, and collaborative efforts within the Ukrainian IT community, we can gain insights into the strategies employed to overcome adversity.

The Ukrainian IT sector has demonstrated remarkable resilience and adaptability in the face of the Russian invasion. Despite the uncertainties and disruptions caused by the conflict, IT companies in Ukraine have showcased their ability to swiftly adapt to changing circumstances. Remote work arrangements, flexible project management strategies, and the ability to quickly switch between client projects have allowed the industry to maintain continuity.

Ukraine boasts a highly skilled and educated workforce, which has played a crucial role in the sector's ability to withstand pressure. The country's strong emphasis on technical education, particularly in computer science and engineering, has produced a pool of talented professionals sought after by both local and international companies. This skilled workforce has been instrumental in driving innovation, developing cutting-edge technologies, and attracting investment to the Ukrainian IT sector. In addition to technical skills, Ukrainian IT professionals have cultivated a strong work ethic and a

drive for continuous learning. Many engage in self-directed learning, participate in online courses, and contribute to open-source projects. This commitment to self-improvement has contributed to the sector's ability to adapt to new challenges and remain at the forefront of technological advancements.

One of the key factors contributing to the resilience of the Ukrainian IT sphere is the collaborative spirit within the industry. The community has come together to support each other during challenging times, forming networks, sharing resources, and collaborating on joint projects. Initiatives such as hackathons, meetups, and conferences have fostered a sense of unity and solidarity, enabling the sector to withstand external pressures. Furthermore, the Ukrainian IT industry has received support from various organizations and institutions. Business incubators, accelerators, and venture capital funds have emerged to nurture and fund promising startups. Government programs have been introduced to facilitate cooperation between IT companies and educational institutions, fostering a strong talent pipeline. This collaborative ecosystem has created a supportive environment for innovation and growth.

The Ukrainian government has recognized the importance of the IT sector and its potential for economic growth. In response to the Russian invasion, the government has taken proactive measures to support the industry. These measures include the implementation of favorable tax policies, the establishment of technology parks and innovation clusters, and the promotion of entrepreneurship and startups. Furthermore, international investments in Ukrainian IT companies have continued to flow, reflecting the confidence in the sector's potential.

In conclusion we came to the point that Ukrainian IT sector's ability to withstand pressure from the Russian invasion is a testament to the resilience, talent, collaboration, and government support within the industry. Despite the challenges posed by the conflict, the sector has continued to grow, innovate, and contribute to Ukraine's economy. By leveraging their skills, adaptability, and collective strength, Ukrainian IT professionals have demonstrated their ability to navigate adversity and emerge stronger.

## References

1. Bohdan Dmytrishin Ukrainian IT without filters. – 24<sup>th</sup> channel, 2023.
2. Anastasia Zanuda How the Ukrainian IT works in the war. – BBC Ukraine, 2022.
3. Stepan Mitish EPAM vice-president – EPAM SYSTEMS, 2022.
4. Nemchinsky S. Current state of IT market. – Foxminded Ltd, 2023.

## **NEURAL NETWORKS. GPT TECHNOLOGY. MIDJOURNEY**

*Mamochka E. I., student,*

*Gerasymchuk T. V., Associate Professor,*

*Kharkiv National University of Radio Electronics*

A neural network can be called a program, which is based on the principle of the brain function.

A neural network is a type of machine learning in which a program works on the principle of the human brain. No one knows 100% exactly how the brain works, but it is believed that this is the most approximate but simplified version. The neural network itself consists of a combination of neurons – layers. There are incoming, hidden and outgoing layers.

We should note that neural networks can be:

1. Single-layer (perceptron) structure of a neural network. It is a structure of neuronal interaction in which signals from the input layer are immediately directed to the output layer, which, in fact, not only converts the signal, but also immediately outputs a response.

2. Multi-layer (Deep) Neural Network. Here, in addition to the output and input layers, there are several other hidden intermediate layers. The number of these layers depends on the degree of complexity of the neural network. It is more like the structure of a biological neural network.

In addition to the number of layers, neural networks can be classified according to the direction of information distribution along synapses between neurons, but first you need to understand what neurons and synapses are.