

There are 8 types of unemployment: seasonal, cyclical, natural, technological, classical, voluntary, temporary and structural.

Seasonal unemployment occurs when demand fluctuates and disappears within a year.

Cyclical fluctuation occurs in the economy, when workers are laid off as the company is unprofitable, and it hires workers if economy grows.

The natural rate of unemployment is a combination of temporary unemployment and structural unemployment.

Technological unemployment is associated with searching for work.

In the case of classical unemployment the number of job-seekers exceeds the number of vacancies.

Voluntary unemployment is a situation where people are unemployed not because of lack of jobs in the economy, but because they cannot find a job of their choice.

Temporary unemployment occurs when people are out of work due to change of a job or profession.

Structural unemployment is caused by scientific and technical progress.

In Ukraine (excluding the temporarily occupied territories of the Autonomous Republic of Crimea and Sevastopol and the zone of the antiterrorist operation) in December 2016 unemployment increased slightly and amounted to 10.9% compared to 9,4% in the first half of 2016.

In January 2017 the unemployment rate in Ukraine increased. The mass closure of small and medium businesses began because of a tax pressure on businesses. In the EU, it is a normal practice, that the business has to pay taxes. For example, in Spain the rate of unemployment is 22%. After the closure of small businesses, many people start working for state enterprises. Germany is an example for Ukraine. Most people work there for public enterprises. Germany's unemployment rate fell to a record low indicator in May, while the jobless rate across the eurozone fell to 10.2% in April.

The unadjusted rate in Germany declined to 6% from 6.3% in April. That was the lowest level since German reunification in 1990. Optimal unemployment rate should not exceed 6 %.

*Scientific supervisor: Anpilohova T.V.,
Senior Lecturer*

UDC 004.732 (043.2)

Mykhailov A.D.

National Aviation University, Kyiv

WI-FI. WIRELESS NETWORK

Wi-Fi (Wireless Fidelity) is the most popular technology for wireless local area networking (WLAN). WLAN is a wireless computer network that links two

or more devices using a wireless distribution method (often spread-spectrum or OFDM (Orthogonal Frequency Division Multiplexing) radio, which is a form of signal modulation that divides a high data rate modulating stream onto many slowly modulated narrowband close-spaced subcarriers) within a limited area such as a home, school, computer laboratory, or office building

The work of WLAN is based on the use of radio waves. Devices communicate in WLAN sending and receiving radio waves (kind of electromagnetic waves), that convert in different kinds of information: audio, video, graphical and text information. A conversion is achieved via the change of an amplitude of radio waves (0 – low amplitude, 1 – high). WLAN has two basic modes of operation: infrastructure (mobile units communicate through access point that serves as a bridge to other networks (such as Internet or LAN)) and ad hoc mode (mobile units transmit information directly to each other). Most Wi-Fi networks are deployed in infrastructure mode.

Wi-Fi was introduced in 1999 as a trademark of Wi-Fi Alliance organization. This organization promotes Wi-Fi technology and certifies Wi-Fi products if they conform to certain standards of interoperability, so that any equipment can be tested in this company, receive a certificate and Wi-Fi logo.

Since Wi-Fi is international technology there was a problem, which is to make possible the use of it on different software. Therefore standards IEEE were introduced. They specify frequency (number of oscillations per unit of time), speed, bandwidth (the range of frequencies within a given band, that used for signals transmission), modulation (process of varying one or more properties of a periodic waveform, called the carrier signal, with a modulating signal that typically contains information to be transmitted), allowable MIMO (stands for multiple-input and multiple-output) streams, which are used to increase the capacity of the network using multiple transmit and receive antennas to use multipath propagation and they also specify approximate range of network.

Nowadays devices that can use Wi-Fi technology include personal computers, cellphones, digital cameras, video-game consoles, tablet computers, digital audio players and modern printers.

As well as any technology Wi-Fi has its advantages and disadvantages. The main advantages are: it is convenient to use, it is used in places, where cable can't be used, or where it's difficult to use wired network, it's also the so called global network that is Wi-Fi equipment can work all over the world unlike a mobile network for example, Wi-Fi devices are also widespread and the most of people can afford them.

Disadvantages of Wi-Fi are: it has lower speed than Ethernet (wired network), the imposition of the same frequency of waves leads to problems (e.g. if microwave is working near the range of router there appears interference of waves), while it's difficult to impact on current in wires, it has small range of network (typically 150 feet (46 m) indoors and 300 feet (92 m) outdoors), that

router provides, and range value depends on the waves transmission environment(e.g. walls prevent the penetration of waves), also the speed of network depends on distance to router, while the speed of wired network is constant for all devices in it.

Wi-Fi technology develops very quickly. In 1997 available speed of WLAN was 1-2 Mb/s, and now in the last IEEE 802.11 standard WLAN can reach the speed of 6.77 Gb/s. That is the speed increased more than in 3000 times. Therefore Wi-Fi is still perspective, powerful technology and the best of its kind.

*Scientific supervisor: Denisenko N.G.,
Senior Lecturer*

UDC 004.056.5 (043.2)

Naidin V.O.

National Aviation University, Kyiv

MACHINE LEARNING SERVICES VIA REST API TECHNOLOGY

Machine learning is the field of computer science that gives a computer the ability to learn without being programmed. It is employed in a great variety of calculating tasks where designing and programming difficult algorithms is practically impossible. As an example, we can consider applications that contain spam filtering, detection of intruders or malicious insiders working towards a data breach, optical character recognition, search engines and computer vision. Machine learning can be used to learn and establish baseline behavioral profiles for different entities and find meaningful anomalies.

Within the field of data analytics, machine learning is a technology used to devise heavy models and algorithms that lend themselves to prediction; in commercial use, it is known as predictive analytics. Such analytical models allow researchers, data scientists, engineers, and analysts to produce reliable, repeatable decisions and results and uncover "hidden problems" via learning from historical relationships and trends in the data. Today there are a lot of services using different technologies for various tasks. The majority of such services are based on REST API.

As a rule, such services offer pre-trained models. Models are trained by the companies and, afterwards, these services are shared with Android developers for usage (they are not free). There is no necessity to have any machine learning knowledge or skills in order to use these models; it's just the connection REST API.

Moreover, among well known and successful companies developing and offering similar services on the market are the following: the Microsoft Cognitive Services, HP Haven On Demand, the Google Cloud Machine Learning APIs and