3) understanding the needs and expectations of customers and stakeholders, and ability to develop solutions that meet those needs;

4) staying up-to-date on industry trends, competition, and regulatory changes that may impact your organization.

In conclusion, the constantly evolving nature of technology requires IT professionals to stay up-to-date on the latest developments and trends. Soft skills such as communication, adaptability, and time management are essential for effective collaboration and problem-solving. Business acumen to understanding how technology can drive business growth and success. In today's digital world, the role of IT has become increasingly important in almost every industry. By possessing the right combination of skills and knowledge, IT specialists can play a vital role.

THE IMPORTANCE OF DEEP LEARNING IN MODERN LIFE

Sereda D. A., student,

Gerasymchuk T.V., Associate Professor,

Kharkiv National University of Radio Electronics

Deep learning (deep learning) is part of the family of machine learning methods (Machine Learning), based on artificial neural networks, with representation training.

Deep learning drives many artificial intelligence (AI) applications and services that enhance automation by performing analytical and physical tasks without human intervention. Deep learning technologies are at the heart of everyday products and services, as well as new technologies.

Deep learning is powered by layers of neural networks, which are algorithms that operate in much the same way as the human brain. Training on large amounts of data allows you to tune neurons in a neural network. As a result, a deep learning model is formed, which, after the end of training, is able to process new data. Deep learning models take information from multiple sources and analyze that data in real time without human intervention. In deep learning, graphics processing units (GPUs) are optimized for training models because they can handle multiple calculations at the same time.

Deep learning differs from classical machine learning in the type of data it works with and the learning methods. The main difference between deep learning and machine learning comes from how data is presented to the system. Machine learning algorithms almost always require structured data, while deep learning networks rely on ANN (artificial neural networks) layers. It doesn't necessarily need structured/human labeled image data to classify two animals.

Deep neural networks are composed of several layers of interconnected nodes, each of which builds on the previous layer to refine and optimize prediction or categorization. This forwarding of computations across the network is called forward propagation. The input and output layers of a DNN are called visible layers. At the input layer, the deep learning model receives data for processing, and at the output layer, the final prediction or classification is made.

Another process, called backpropagation, uses algorithms such as gradient descent to calculate the errors in the predictions and then adjusts the weights and biases of the feature as it moves back through the layers to train the model. Together, forward propagation and back propagation allow the neural network to make predictions and correct any errors accordingly. Over time, the algorithm gradually becomes more accurate.

Deep learning has several use cases in automotive, aerospace, manufacturing, electronics, medical research, and other fields. These various use cases for deep learning can be divided into four broad categories: computer vision, speech recognition, natural language processing (NLP), and recommendation engines.

Computer vision is the ability of computers to extract information and meaning from images and videos. Computers can use deep learning techniques to recognize images the way humans do. For example: content moderation to automatically remove insecure or inappropriate content from image and video archives; face recognition for identifying people and recognizing attributes such as open eyes, glasses, and facial hair; image classification to identify brand logos, clothing, protective gear and other image details Speech recognition. Deep learning models can analyze human speech regardless of its speech patterns, pitch, tone, language, and accent. Virtual assistants

such as

Amazon Alexa and automatic transcription software use speech recognition to perform the following tasks: assistance to call center operators and automatic classification of calls; convert clinical guidelines into real-time documentation; accurate subtitles for videos and meeting recordings for wider content coverage; natural language processing. Computers use deep learning algorithms to extract information and values from text data and documents. This ability to process natural human-generated text has found several uses, including in the following features: automated virtual agents and chatbots, automatic summarization of documents or news articles, business intelligence of long documents: e.g. emails and forms; indexing key phrases that indicate mood: for example, positive and negative comments on social networks.

Recommendation Services. Applications can use deep learning to track user activity and make personalized recommendations. They can analyze the behavior of various users and help them find new products or services. For example, many media and entertainment companies such as Netflix, Fox, and Peacock use deep learning to provide personalized video recommendations.

To summarize, real-life applications of deep learning are part of our daily lives.

They have found their application in the following areas: law enforcement, financial services, customer services, healthcare, etc. Deep learning is worth using when we have a huge amount of data and if the tasks are too complex for machine learning.

While deep learning is constantly finding new applications, it is still an emerging field that has its limitations. To give more accurate results, deep learning must process a very large amount of data. Deep learning networks need data to solve one specific problem. If they have to go beyond this task, they are likely to start making mistakes. It is difficult to understand exactly how the neural network came to a particular conclusion. Due to the fact that the data processing process is not transparent, it is difficult to identify possible unintended preferences and explain the predictions. But despite these limitations, data scientists are getting closer to building highly accurate

deep learning models and deep learning will become faster and less resource-intensive.

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SECURING YOUR AWS WORKLOADS: BEST PRACTICES FOR IDENTITY AND ACCESS MANAGEMENT

Semko D., student,

Gerasymchuk T.V., Associate Professor,

Kharkiv National University of Radioelectronics

As more organizations move their IT infrastructures to the cloud, Amazon Web Services (AWS) has become a leading provider of cloud computing services. AWS offers a range of services, including storage, compute, and database management, that allow organizations to quickly scale their resources and meet their business needs.

However, with the benefits of cloud computing come unique security challenges, particularly when it comes to Identity and Access Management (IAM).

IAM is a critical component of securing AWS workloads. Organizations must ensure that only authorized users have access to their resources and that those users are granted the appropriate level of access.

The least privilege principle is a security best practice that restricts user access to only the resources and data necessary for their job functions. By limiting user access, organizations can reduce the risk of insider threats and unauthorized access to sensitive data. IAM policies, which we can define as a set of rules that define the permissions granted to AWS users, should be designed with the least privilege principle in mind to ensure that users only have the necessary permissions to perform their tasks. AWS