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LEADING BRANCHES OF TECHNOLOGICAL SCIENCES: INFORMATION TECHNOLOGIES, NANOTECHNOLOGIES, ENERGY TECHNOLOGIES, ROBOTICS AND AEROSPACE TECHNOLOGIES

Technological sciences encompass a wide range of disciplines that focus on the study, development, and application of a variety of technologies. These sciences form the basis of modern progress and innovation, playing a key role in solving many global problems facing humanity. From engineering and computer science to medical technology and nanotechnology, technological sciences are constantly expanding the boundaries of human capabilities, improving the quality of life and opening new perspectives for future development.

At the center of technological sciences are practical applications of scientific knowledge aimed at solving specific problems. Engineers, designers, inventors and scientists working in this field combine theory with experience to create innovative solutions that change the world around us. From the development of new materials and devices to the implementation of modern information technologies, technological sciences are the driving force of progress in all areas of human activity.

Information Technology (IT) is the engine of modern progress, spanning a wide range of industries and sectors. This dynamic and rapidly growing field includes software development, computer systems creation, cyber security, data processing and analysis, as well as the development of new technological solutions to meet the needs of society.

One of the key areas of information technology is the creation of software for various purposes – from operating systems and office applications to complex software complexes and mobile applications. Software developers work on improving existing solutions and creating innovative products aimed at increasing the efficiency, convenience and accessibility of modern technologies.

Cyber security is an extremely important component of information technologies, because the protection of data and systems from cyber threats is becoming more and more relevant in the conditions of intensive digitization of society. Cyber security professionals develop advanced methods and tools to counter hacker attacks, protect sensitive information, and ensure the safety of critical infrastructure.

Nanotechnology is a branch of science and engineering that deals with the manipulation and study of materials, devices, and systems at the atomic, molecular, and supramolecular levels. This new field of scientific research is related to the development and use of materials, devices and systems with new unique properties due to their ultra-small dimensions. Nanotechnology opens up many promising directions, from the creation of new drugs and materials to the improvement of computer technologies and energy production.

For example, carbon nanotubes can be hundreds of times stronger and lighter than steel, and nanoparticles can be used for targeted delivery of drugs in the human body. Nanorobots may in the future perform medical or industrial tasks at the molecular level. Nanotechnology can also revolutionize fields such as optics, electronics, solar energy, catalysis and materials science. This is one of the most promising areas of science and engineering, which opens up new opportunities for the development of society.

Energy technologies are a vital component of modern society. They include a wide range of developments and applications aimed at efficient production, transmission and use of energy. From the development of renewable sources such as solar, wind and hydropower to the improvement of traditional ways of extracting and burning fossil fuels, energy technologies are constantly evolving to meet humanity's growing energy needs.

One of the key directions of energy technologies is the improvement of energy efficiency. This includes the development of more economical engines, heating and cooling systems, and energy storage technologies. This allows you to reduce the consumption of resources and reduce the negative impact on the environment. In addition, the implementation of "smart" energy networks and energy management systems helps to optimize the distribution and use of electricity, minimizing losses.

An important aspect of energy technologies is also the search and development of new, alternative sources of energy. Among them – biofuel, geothermal energy, energy of tides and waves. Their development helps diversify the energy sector and reduce dependence on fossil fuels. These technologies not only provide cleaner production, but also open up new opportunities for economic growth and job creation.

Robotics is an exciting and dynamic field of technological sciences that is rapidly developing all over the world. It is robotics that makes it possible to create high-tech machines capable of automatically performing a wide variety of tasks and functions, replacing humans in dangerous, complex or routine operations. From simple industrial robots to complex autonomous systems, robotics today is used in many fields – from manufacturing to medicine, from logistics to military affairs.

Important directions of modern robotics are mobile robotics, robotic manipulators, biomimic robots imitating the movement of living beings, rescue robots for emergency situations, as well as smart household devices. Robotics

researchers are working to create increasingly autonomous, intelligent, and multifunctional systems that can operate in complex, dynamic environments without constant human intervention.

The use of robotics makes it possible to significantly increase the productivity, accuracy and safety of a wide range of tasks, and also opens up new opportunities for studying and learning about the surrounding world. That is why robotics is one of the key areas of technological progress that is constantly transforming our society.

Aerospace technology encompasses a wide range of innovations that are changing our perception of the world and our place in it. This includes the development of aircraft such as airplanes, helicopters and spacecraft, as well as the technologies required for their efficient operation and operation. Aerospace technology allows us to explore space, launch satellites into orbit, and make incredible interplanetary journeys.

Scientific and technical developments in the field of aerospace technologies are constantly being improved, increasing the speed, maneuverability and safety of flights. The introduction of the latest materials, control systems, engine installations and other innovative solutions allows us to create more and more advanced and efficient aircraft. These advances are not only changing the aviation and aerospace industry, but also opening up new opportunities for applications in other areas such as medicine, transportation, communications and even defense.

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ІНТЕГРАЦІЯ ТА ВПЛИВ ШТУЧНОГО ІНТЕЛЕКТУ НА МАРКЕТИНГОВУ КОМУНІКАЦІЮ

Впровадження штучного інтелекту відкрило трансформаційні можливості в динамічному погляді на маркетингові комунікації, змінивши уявлення про те, як компанії розуміють свою аудиторію та взаємодіють з нею. Основною метою цього дослідження є аналіз впливу штучного інтелекту на маркетингові комунікації, з метою надання повного розуміння його різноманітних можливостей застосування.

Маркетингова комунікація є ключовим елементом стратегії бізнесу щодо взаємодії з цільовою аудиторією, просування своїх пропозицій та