

The origin of artificial intelligence

Ismonaliyev Sanjarbek Qambaraliyevich, Sultonov Muhammadali

Ro'ziboyevich,

Tashkent University of Information Technologies named after Muhammad al-

Khwarizmi

+998936726496; +998999472581

Artificial intelligence (AI) performs a progressively imperative role in management sciences and operational research. Intelligence is generally described as having the cognitive capacity to absorb information and use it to unravel complex dilemmas. According to researchers, intelligent machines will soon overtake human competencies. Intelligent machines and software that can think, assimilate, accumulate information, interact, control, and discern objects are known as artificial intelligence. In 1956, John McCarthy came up with the term to define a new computer science field that aims to make machines act like human beings. The computational analysis enables us to understand the diverse behavior of different AI algorithms. Unlike psychology, AI focuses on computation, whereas computer science focuses on interpretation, thinking, and execution. AI processes boost the intellectual prowess and versatility of machines. Generally, these processes use artificial neurons (artificial neural networks) and mathematical theorems (if-then statements and logics). AI technology has advanced to such an extent that it can presently have real-world advantages and be used in various applications. Expert systems, natural language processing, speech understanding, robotics and sensory systems, computer vision and scene recognition, intelligent computeraided instruction, and neural computing all seem to be paramount artificial intelligence domains. Expert system is an emerging technology that significantly influences several fields. Artificial intelligence approaches include Neural Networks, Fuzzy Logic (FL), Evolutionary Computing, and Hybrid Artificial Intelligence. Artificial intelligence is more effective than natural

intelligence since it is more enduring, reliable, less costly, demonstrable, and convenient to replicate and propagate. It is also capable of handling specific processes better than humans. Alan Turing (1950) posited the Turing test, which was created to ascertain whether a machine can think or not. The test comprises a human inquirer who engages with both humans and machines to assess who is a human and a machine. After asking a few written questions, the machine passes the test if the inquirer cannot discern whether a written answer is from a person or a machine. Further, many Researchers in such a diversity of disciplines sought to make funding and specific other investment for forecast financial patterns, analyze financial and shareholder conduct, assess priorities, monitor balance sheets, cost capital raising, ascertain the level of earnings, and pinpoint symmetries in security trading volumes, anticipating deficits and bankruptcies. In this regard, various approaches have been used. Such approaches may be categorized into parametric statistical methods (which include discriminant analysis and logistic regression), non-parametric statistical methods (including special k nearest neighbor and decision trees), and soft computing techniques (for instance, rough sets and artificial intelligent algorithms). Artificial intelligence approaches, especially ANN, have recently become one of the most amazing tools in financial markets. AI breakthroughs have significantly affected our contemporary world. The notion of machines exhibiting the human form of comprehension used to be a distinctive research area of computer science and mathematics; however, it has proliferated and evolved in recent years to become a robust and prevalent industrial tool. Since the last few decenniums, researchers have paid substantial attention to notable Machine Learning (ML) approaches, now reforming entire economies. Due to the increased use of AI in various tasks, such as natural language processing, information representation, automatic reasoning, computer vision, and robotics. Initial spacecraft configuration to mission operations, from route planning enlightenment and control algorithms to the prognosis of the mechanism's motion, classification of celestial phenomena, and optimization of faraway discerning data, are a few applications. Various fields are increasingly using AI due to its efficacy

in dealing with dilemmas that humans or conventional computing systems cannot resolve. The continuous improvements and broad range of applications of AI also result in increased use . 30.7 % of the global inhabitants are deeply involved in the agricultural sector, with 2781 million hectares of agricultural land. From the sowing phase to the reaping one, farming can be a difficult task and is not without its impediments. It is essential to curb plague and disease outbreaks, inappropriate chemical application, and inappropriate sewerage and sprinkling and manage weed growth, yield prognosis, and other agricultural issues . AI originally stood for artificial intelligence for vehicles. It seeks to execute both realistic and sophisticated AI techniques so that the vehicles can self-drive in a human-like manner . For instance, deep neural networks are algorithms trained within enormous data sets to conduct divergent processes and thus are programmed to replicate the functioning hypothesis of the mind. Intelligent vehicles amalgamate AI approaches, including environmental consciousness, map creation and navigation mechanisms, and multi-scale supplementary driving facilities to enable vehicles to make intelligent choices

At present, firms and institutions across the globe are contemplating capital partnerships . The AV processes affect environment consciousness, perceptual chart, route scheduling, and tactic management . The main job is to grasp how to teach the machines to act the same as humans. Multisensory high data, orientation technology, optimum path scheduling, executive regulation innovations, humancomputer collaboration, and resilience mitigation innovations are now based on artificial intelligence algorithms. Deep reinforcement learning approaches have become prominent. AI is a computer science component encompassing robotics's reasoning and organizational aspects. By utilizing AI methods, robotics has evolved exponentially, granting numerous prospects for simulation activities in various application fields, namely household utilities, aerospace expeditions , diagnostic interventions, and combat activities. It also aids in accumulating data based on air pressure, weather, atmosphere, wind, and other parameters . Due to these advancements, robots can operate at the workplace and in residences and

enterprises, performing numerous hazardous and tedious activities. As per Figure 2, robots can be split into service robots and field robots. The field of robotics has created tremendous repercussions on divergent socioeconomic facets of our community. Intelligent robotics seeks to build machines that can perceive, interpret, and behave exactly as humans do. Hence, intelligent robotics is self-instructed; Figure 2: Taxonomy of Robotics , self-arranged , and self-replicating . In the past 15 years, many computer-based diagnostic systems have been postulated to assist nuclear power plant (NPP) crews amid abnormal plant circumstances. Alongside the breakthroughs in cognitive science and computer science disciplines relevant to artificial intelligence, computer systems for detector and device malfunction prognosis have been posited. Computer-based systems diagnostics pursued the area of artificial intelligence, which is progressed by expert systems in the initial and mid-1980s towards artificial neural networks (ANNs) and via binary logic towards multivalued or fuzzy logic . Aside from the advancements in cyber security and artificial intelligence, there are myriad integrative correlations that still need to be uncovered. AI technologies, such as deep learning, can be applied in cyber security to create shrewd models for malware recognition, intrusion prevention, and intelligent threat detecting. AI models would be susceptible to many cyber assaults undermining their sample, training, and choices. To counter antagonistic machine learning, maintain machine learning confidentiality, and secure federalized learning,

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