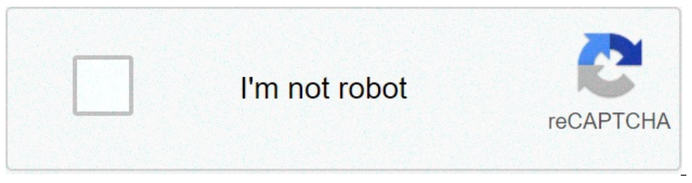

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Answers of the return of artificial intelligence

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Our Goods & Services Tax course includes tutorial videos, guides and expert assistance to help you in mastering Goods and Services Tax. ClearTax can also help you in getting your business registered for Goods & Services Tax Law. Save taxes with ClearTax by investing in tax saving mutual funds (ELSS) online. Our experts suggest the best funds and you can get high returns by investing directly or through SIP. Download ClearTax App to file returns from your mobile phone. || It is becoming acceptable again to talk of computers performing human tasks such as problem-solving and pattern-recognition. A After years in the wilderness, the term ‘artificial intelligence' (AI) seems poised to make a comeback. AI was big in the 1980s but vanished in the 1990s. It re-entered public consciousness with the release of AI, a movie about a robot boy. This has ignited public debate about AI, but the term is also being used once more within the computer industry. Researchers, executives and marketing people are now using the expression without irony or inverted commas. And it is not always hype. The term is being applied, with some justification, to products that depend on technology that was originally developed by AI researchers. Admittedly, the rehabilitation of the term has a long way to go, and some firms still prefer to avoid using it. But the fact that others are starting to use it again suggests that AI has moved on from being seen as an over- ambitious and under-achieving field of research. B The field was launched, and the term ‘artificial intelligence’ coined, at a conference in 1956,,by a group of researchers that included Marvin Minsky, John McCarthy, Herbert Simon and Alan Newell, all of whom went on to become leading figures in the field. The expression provided an attractive but informative name for a research programme that encompassed such previously disparate fields as operations research, cybernetics, logic and computer science. The goal they shared was an attempt to capture or mimic human abilities using machines. That said, different groups of researchers attacked different problems, from speech recognition to chess playing, in different ways; AI unified the field in name only. But it was a term that captured the public imagination. C Most researchers agree that AI peaked around 1985. A public reared on science-fiction movies and excited by the growing power of computers had high expectations. For years, AI researchers had implied that a breakthrough was just around the corner. Marvin Minsky said in 1967 that within a generation the problem of creating ‘artificial intelligence' would be substantially solved. Prototypes of medical-diagnosis programs and speech recognition software appeared to be making progress. It proved to be a false dawn. Thinking computers and household robots failed to materialise, and a backlash ensued. 'There was undue optimism in the early f 980s,’ says David Leake, a researcher at Indiana University. ‘Then when people realised these were hard problems, there was retrenchment. By the late 1980s, the term AI was being avoided by many researchers, who opted instead to align themselves with specific sub-disciplines such as neural networks, agent technology, case-based reasoning, and so on.’ D Ironically, in some ways AI was a victim of its own success. Whenever an apparently mundane problem was solved, such as building a system that could land an aircraft unattended, the problem was deemed not to have been AI in the first place. ‘If it works, it can’t be AI,' as Dr Leake characterises it. The effect of repeatedly moving the goal-posts in this way was that AI came to refer to 'blue-sky' research that was still years away from commercialisation, Researchers joked that AI stood for 'almost implemented’. Meanwhile, the technologies that made it once the market, such as speech recognition, language translation and decision-support software, were no longer regarded as AI. Yet all three once fell well within the umbrella of AI research. E But the tide may now be turning, according to Dr Leake. HNC Software of San Diego, backed by a government agency, reckon chat their new approach to artificial intelligence is the most powerful and promising approach ever discovered. HNC claim that their system, based on a duster of 30 processors, could be used to spot camouflaged vehicles on a battlefield or extract a voice signal from a noisy background - tasks humans can do well, but computers cannot. ‘Whether or not their technology lives up to the claims made for it, the fact that HNC are emphasising the use of AI is itself an interesting development,' says Dr Leake. F Another factor that may boost the prospects for AI in the near future is that investors are now looking for firms using clever technology, rather than just a clever business model, to differentiate themselves. In particular, the problem of information overload, exacerbated by the growth of e-mail and the explosion in the number of web pages, means there are plenty of opportunities for new technologies to help filter and categorise information - classic AI problems. That may mean that more artificial intelligence companies will start to emerge to meet this challenge. G The 1969 film, 2001:A Space Odyssey, featured an intelligent computer called HAL 9000. As well as understanding and speaking English, HAL could play chess and even learned to lipread. HAL thus encapsulated the optimism of the 1960s that intelligent computers would be widespread by 2001. But 2001 has been and gone, and there is still no sign of a HAL-like computer. Individual systems can play chess or transcribe speech, but a general theory of machine intelligence still remains elusive. It may be. however, that the comparison with HAL no longer seems quite so Important, and Al can now be judged by what it can do, rather than by how well it matches up to a 30-year-old science-fiction film. ‘People are beginning to realise that there are impressive things that these systems can do.’ says Dr Leake hopefully. Reading Passage has seven paragraphs, A-G. Which paragraph contains the following information? Write the correct letter A-G in boxes 1-5 on your answer sheet. NB You may use any letter more than once. 1 ABCDEFG how AI might have a military impactAnswer: E Locate 2 ABCDEFG the fact that AI brings together a range of separate research areasAnswer: B Locate 3 ABCDEFG the reason why AI has become a common topic of conversation againAnswer: A Locate 4 ABCDEFG how AI could help deal with difficulties related to the amount of information available electronicallyAnswer: F Locate 5 ABCDEFG where the expression AI was first usedAnswer: B Locate Do the following statements agree with the information given in Reading Passage 3? In boxes 6-11 on your answer sheet, write TRUE if the statement agrees with the information FALSE if the statement contradicts the information NOT GIVEN if there is no information about this 6 TRUEFALSENOT GIVEN The researchers who launched the field of AI had worked together on other projects in the past.Answer: NOT GIVEN 7 TRUEFALSENOT GIVEN In 1985, AI was at its lowest point.Answer: FALSE Locate 8 TRUEFALSENOT GIVEN Research into agent technology was more costly than research into neural networks.Answer: NOT GIVEN 9 TRUEFALSENOT GIVEN Applications of AI have already had a degree of success.Answer: TRUE Locate 10 TRUEFALSENOT GIVEN The problems waiting to be solved by AI have not changed since 1967.Answer: FALSE Locate 11 TRUEFALSENOT GIVEN The film 2001: A Space Odyssey, reflected contemporary ideas about the potential of AI computers.Answer: TRUE Locate AI (Artificial Intelligence) and ML (Machine Learning) can offer organisations breakthroughs in their production systems and even a competitive advantage if used thoughtfully and in the right context. The digital transformation and its multiple advances have generated pressure on companies, derived from the fear of being left behind, which in turn has resulted in a pre-willingness among leaders to implement these technologies in their companies. But in most cases, even if adopted, the fundamental barriers remain and few companies have the basic components that allow AI to generate value at scale. Being clear about where the Artificial Intelligence opportunities are and having central and defined strategies to obtain the data that AI requires should be the starting point for any entity that decides to immerse itself in this transformation. Therefore, before adopting an AI and ML strategy, companies should ask themselves the following questions: 1. What is the problem you plan to solve with AI? The main thing in this case is to start by defining the problem. What is the company looking for? Is it a machine learning model that can solve it? Is it known specifically what AI systems will be used for? It is important, on one hand, to detect which types of activities are being inefficient or human capital intensive, and on the other hand, to determine how AI and ML systems can mitigate these problems. 2. What is the company’s plan to turn AI into an opportunity? How does the company plan to address the problem and implement the solution? At this point it is essential to know how to reformulate the problem definition in an automatic learning problem and how to implement it in a way that avoids any kind of slowdown or loss of value during the transformation process. 3. Does the company need a temporary or permanent solution? AI technologies must become part of the company’s core business and must be accompanied by a change of mentality on the part of the management team. The vast majority of success stories are supported by a digital transformation of the company at all levels. Depending on whether an AI model is needed for a specific action or for the company’s daily processes, it will be decided to acquire a customised product, a standardised solution or a temporary service. 4. Does the company have the necessary data to feed the AI model? The quality of the AI model is directly dependent on the quality and quantity of data available to the company. The use of AI implies training an accurate and meaningful data model that can feed the AI systems so that they learn to function on their own, therefore, having a quality historical data is key. Does my company have enough data? Are the data sources that the AI will use are reliable? Does the company have a robust data architecture? In order to answer these questions, it is necessary to have a solid framework of objectives and KPIs (key performance indicators) and a robust data strategy to ensure that it is squeezed in the most valuable way possible. 5. Is this data digitised? Do I have the data stored in digital systems? To be able to manage the data correctly, they must be digitised, centralised, organised and integrated in different digital tools (such as CRM’s, or ERP’s, SCADAS, etc.) or in databases, CSV files, Excels, etc. If this is not the case, the digitalisation and use of AI of these data can take a long time and sometimes an insurmountable investment. 6. Does the company have the necessary resources for the implementation? The company must be realistic about whether it really has the necessary resources at the level of human and financial capital to absorb change. Where will we find the expert talent to deploy AI? What is the company’s budget for acquiring an ML model? In order to achieve a smooth transition and a correct integration of the models in the internal systems, it is key to have a technical team that knows the company and also knows the developer or data scientist. In addition, these teams must be qualified to integrate the models to be implemented into the company’s systems. On the other hand, the accuracy of the AI model will depend on the budget, equipment and time available to the company to develop it. All this will also determine whether the company chooses an on-demand service or the acquisition of its own model implemented by its team. 7. What are the consequences if AI fails? AI models work through very sophisticated algorithms and statistical correlations, but there is always a margin of error. Does the company want to implement AI in a process with high variability and a low accuracy rate, or the opposite? What risks and how much investment would be lost if it didn’t work out? Depending on which systems and data are available, the company must evaluate whether the accuracy of these models is expected to be high enough to proceed. 8. How will AI be integrated with the company’s overall strategy? How will the company integrate IA with processes and people? Are there turning points where IA will collide with processes? AI should not be implemented as a stand-alone technology, but as an integrated solution that enters into synergy with all areas of the company to maximise productivity and results. The company must ask itself if the AI model will be able to work together with the rest of the parties and identify what problems may arise. 9. How will this change affect the company’s workers? To what extent will IA’s ability to automate the activities now performed by workers affect the size of the workforce? Workers can be very sceptical of change and the company must find ethical solutions so that they do not lose their value and motivation. Effective change programs will focus on specific training and interventions to involve employees and managers in the company. 10. What are the expected returns from applying this technology? How long will it take for the company to recover the investment? How much will the company’s costs be reduced once AI is implemented? Integrating AI and ML models in a company implies a cost and therefore an important investment. For this reason, a realistic estimation must be made to determine the parameters of the return on investment. To carry out this plan, the possible performance indicators (KPI’s) should be established, so that the return can be measured and how much value the model is bringing to the company should be calculated. Are you thinking of implementing AI in your company? AI opens doors to countless possibilities for businesses, but if it is deployed simply as an experiment, if a specific problem is not identified and a plan of action is not created, then it will turn out to be a worthless proposition and management will see no return on investment. From Nexus Integra we pave the way for the implementation of AI and ML technologies to be an assured success story. Nexus Integra, the integrated operations platform, offers a structured Big Data tool that provides data scientists with the quantity and quality of data needed for AI and Machine Learning applications, as well as the exploitation of the data in any of its applications; native or external. The native application of Machine Learning allows for the management of different advanced algorithms and their easy introduction into the production process in real time. Nexus Integra as an integral operation center and Big Data platform allows to get the maximum value from the data.