

I'm not a robot



Storia dell'intelligenza artificiale pdf

questo terzo numero di Archeologia si è voluto approfondire il tema dell'intelligenza artificiale e in particolare sulle sue applicazioni culturali e soprattutto nelle sue applicazioni culturali, vista la grande diffusione di queste nuove tecnologie praticamente in ogni campo. Ci siamo dunque affidati a esperti di diversi settori, a partire dai referenti della Sieda SpA, l'azienda informatica che nel 2012 data vita alla Fondazione Dia Cultura e che oggi ha nell'intelligenza artificiale il suo principale ambito di ricerca e occupazione. Abbiamo poi portato l'esempio dell'applicazione della robotica alle scienze mediche grazie al progetto NeuroARTfact che vede nel sodalizio tra il Museo Nazionale Etrusco di Villa Giulia, la "Sapienza" - Università di Roma e la Duke University la realizzazione dell'indagine sulla percezione e sugli stimoli generati dalle opere d'arte e messi al servizio della riabilitazione medica. Infine un articolo come anche l'archeologia subacquea abbia tratto enorme giovamento dal connubio con l'uso di tecnologie legate all'intelligenza artificiale. DSA to Development: A Complete GuideBeginner to AdvanceJava Backend Development - LiveIntermediate and AdvanceTech Interview 101 - From DSA to System Design for Working ProfessionalsBeginner to AdvanceFull Stack Development with React & Node JS - LiveBeginner to AdvanceJava Programming Online Course [Complete Beginner to Advanced]Beginner to AdvanceC++ Programming Course Online - Complete Beginner to AdvancedBeginner to AdvancePage 2Our website uses cookiesWe use cookies to ensure you have the best browsing experience on our website. By using our site, you acknowledge that you have read and understood our Cookie Policy & Privacy Policy What is AI? Artificial Intelligence: A Comprehensive OverviewThe field of artificial intelligence (AI) is a branch of computer science that aims to create machines that can perform tasks that normally require human intelligence. AI encompasses a range of abilities including learning, reasoning, perception, problem solving, data analysis and language comprehension. The ultimate goal of AI is to create machines that can emulate capabilities and carry out diverse tasks, with enhanced efficiency and precision. The field of AI holds potential to revolutionize aspects of our daily lives. In this article, we will know about What is Artificial Intelligence?, its evolution, various types of AI, training models, benefits. What is Artificial Intelligence? (AI) has become increasingly integrated into various aspects of our lives, revolutionizing industries and impacting daily routines. Here are some examples illustrating the diverse applications of AI:Virtual Personal Assistants: Popular examples like Siri, Google Assistant, and Amazon Alexa utilize AI to understand and respond to user commands. These assistants employ natural language processing (NLP) and machine learning algorithms to improve their accuracy and provide more personalized responses over time.Automotive Vehicles: AI powers the development of self-driving cars, trucks, and drones. Companies like Tesla, Waymo, and Uber are at the forefront of this technology, using AI algorithms to analyze sensory data from cameras, radar, and lidar to make real-time driving decisions.Healthcare Diagnosis and Treatment: AI algorithms are used to analyze medical data, including patient records, imaging scans, and genetic information, to assist healthcare professionals in diagnosing diseases and planning treatments. IBM's Watson for Health and Google's DeepMind are examples of AI platforms employed in healthcare.Recommendation Systems: Online platforms like Netflix, Amazon, and Spotify use AI algorithms to analyze user preferences, viewing history, and purchase patterns to recommend movies, books, and products that are likely to interest them. These recommendations are based on machine learning algorithms that identify patterns and similarities in user behavior.Fraud Detection: AI is used to detect and prevent fraudulent activities in real-time. Financial institutions and e-commerce companies employ AI algorithms to analyze transaction patterns and identify suspicious behavior, such as unusual purchases or login attempts. This helps in reducing financial losses and maintaining the security of users' accounts.Language Translation: AI-powered translation services like Google Translate and Microsoft Bing use machine learning algorithms to provide accurate translations between different languages. This technology is particularly useful for global communication and business transactions.Education: AI is used to personalize learning experiences for students. Adaptive learning systems use AI algorithms to assess a student's knowledge and tailor the content and pace of instruction to their individual needs, improving learning outcomes and efficiency.Agriculture: AI is used in precision farming to optimize crop yields and reduce resource consumption. AI-powered sensors and drones monitor crop health, soil conditions, and pest infestations, allowing farmers to make data-driven decisions about irrigation, fertilization, and pest control. These applications demonstrate the wide range of AI's impact on various aspects of our lives, from healthcare and education to transportation and entertainment. As AI continues to advance, its applications are expected to expand further, revolutionizing industries and improving our daily lives.

technology.Importance of AI today, the amount of data in the world is so huge that humans fall short of absorbing, interpreting, and making decisions of the entire data. This complex decision-making requires highly cognitive skills than human beings. This is why we're trying to build machines better than us, in these tasks. Another major characteristic that AI machines possess but we don't is repetitive learning. Let consider an example of how Artificial Intelligence is important to us. Data that is fed into the machines could be real-life incidents. How people interact, behave and react? etc. So, in other words, machines learn to think like humans, by observing and learning from humans. That's precisely what is called Machine Learning which is a subfield of AI. Humans are observed to find repetitive tasks highly boring. Accuracy is another factor in which humans lack. Machines have extremely high accuracy in the tasks that they perform. Machines can also take risks instead of human beings. AI is used in various fields like: Health CareRetailManufacturingBanking etc.Types of AI: AI can be broadly classified into two major categories: Based on Capabilities:1. Narrow AI: Narrow AI, also known as Weak AI, refers to artificial intelligence systems that are designed and trained to perform a specific task or a narrow range of tasks. These systems excel at their designed tasks but lack the broad cognitive abilities and understanding of human intelligence. Narrow AI is the most common form of AI currently in use and has found widespread application across various industries and domains.Characteristics of Narrow AI include:Specialized capabilities: Narrow AI systems are highly specialized and focused on performing specific tasks, such as image recognition, natural language processing, or recommendation systems.They lack general intelligence: Unlike humans, Narrow AI systems do not possess the ability to learn from experience, transfer knowledge to new tasks, or understand the context or implications of its actions.Examples: Virtual personal assistants like Siri and Alexa, recommendation systems, image recognition software, chatbots, and autonomous vehicles are all examples of Narrow AI.2. General AI: General AI, also referred to as "Strong AI", Here is where there is no difference between a machine and a human being. This is the kind of AI we see in the movies, the Robots. A close example (not the perfect example) would be the world's first citizen robot, Sophia. She was introduced to the world on October 11, 2017. Sophia talks like she has emotions.General AI, also known as Strong AI or Artificial General Intelligence (AGI), refers to artificial intelligence systems that replicate human-like cognitive abilities and understanding across a wide range of tasks and domains. Unlike Narrow AI, which is task-specific, General AI aims to simulate human intelligence comprehensively, including reasoning, problem-solving, learning, and adaptation to new situations.Characteristics of General AI include:Human-like cognitive abilities: General AI systems can understand, learn, and apply knowledge across various tasks and domains, similar to human intelligence.Adaptability: These systems have the ability to generalize their knowledge and skills to new situations, tasks, and environments.Consciousness: General AI is theorized to possess self-awareness, consciousness, and subjective experiences, although achieving this level of intelligence remains a theoretical challenge.Examples: General AI remains largely theoretical and speculative, as researchers have not yet achieved human-level artificial intelligence. Development in this area continues to be a subject of ongoing research and exploration.3. Super Intelligent AI: Super Intelligent AI, also known as Artificial Super Intelligence (ASI), refers to a hypothetical form of AI that would surpass human intelligence in every aspect, including reasoning, problem-solving, learning, and adaptation. It is considered the most advanced and potentially most powerful form of AI. Characteristics of Super Intelligent AI include:Cognitive superiority: Super intelligent AI outperforms humans in terms of cognitive abilities, including problem-solving, creativity, and strategic planning.Rapid learning and adaptation: These systems can acquire and process information at an unprecedented speed and scale, leading to rapid advancements in various fields.Ethical and existential risks: The development of Super intelligent AI raises concerns about its potential impact on society, including risks related to control, alignment with human values, and existential threats to humanity.Examples: Super intelligent AI remains theoretical, and no concrete examples exist as of now. However, researchers are actively exploring the implications and challenges associated with its development.Based on Functionality:1. Reactive machines: These are the most basic type of AI and are purely reactive as the name suggests. They neither can form memories nor can use past experiences to form decisions. An example would be IBM's Deep Blue chess-playing supercomputer which is mentioned above. Deep Blue beat the international grandmaster Garry Kasparov in 1997. It can choose the most optimal of the chess moves and beat the opponent. Apart from a rarely used chess-specific rule against repeating the same move three times, Deep Blue ignores everything before the present moment, thus not storing any memories. This type of AI just perceives the world, the chess game in the case of Deep Blue, and acts on it.2. Limited memory: These machines can look into the past. Not the ability to predict what happened in the past, but the usage of memories to form decisions. A common example could include self-driving cars. For example, they observe other cars' speed and directions and act accordingly. This requires monitoring of how a car is driven for a specific amount of time. Just like how humans observe and learn the specifics. These pieces of information are not stored in the library of experiences of the machines, unlike humans. We humans automatically save everything in the library of our mind. This type of AI is used in various applications, such as recommendation systems, fraud detection, and image recognition. It is the most common type of AI used in the real world.3. Theory of mind: This type of AI is the most advanced and is still under development. It is the kind of AI like Sophia, the research is not complete yet. In other words, these machines have a notion of not just the world, but also the existing entities of the world, like human beings, animals, etc. These machines will be capable of answering simple "what if" questions. They'll have a sense of empathy.4. Self-Awareness: These types of machines can be called human equivalents. Of course, no such machines exist and the invention of them would be a milestone in the field of AI. These basically will have a sense of consciousness of who they are. The sense of "I" or "me". Here's a basic example of the difference between "theory of mind" and "self-awareness": AI. The feeling of I want to play is different from the feeling of I know I want to play. In the latter, if you notice, there is a sense of consciousness and is a characteristic of a self-aware machine, while the former feeling is a characteristic of a theory-of-mind machine. Self-aware machines will have the ability to predict others' feelings. Let's hope the invention is not so far away.How Does AI Work?Artificial Intelligence (AI) uses a wide range of techniques and approaches that enable machines to simulate human-like intelligence and perform tasks that traditionally require human assistance. AI systems work through a combination of algorithms, data, and computational power. Here's an overview of how AI works:Data Collection: AI systems rely on vast amounts of data to learn and make decisions. Data can be collected from various sources, including sensors, digital devices, databases, the internet, and user interactions. The quality and quantity of data are crucial for training accurate and reliable AI models.Data Pre-processing: Once data is collected, it needs to be pre-processed to make it suitable for AI algorithms. This involves cleaning the data, removing noise, and transforming it into a format that the AI model can understand.Feature Extraction: AI algorithms need to identify relevant features from the data. Feature extraction involves selecting the most important information from the data and representing it in a way that the AI model can use to make predictions or decisions.Model Training: AI models are trained using large datasets and powerful algorithms. The training process involves feeding the model with labeled data (data where the correct output is known) and allowing the model to learn from its mistakes. Common AI algorithms include neural networks, decision trees, support vector machines, and k-nearest neighbors.Model Evaluation: Once the AI model is trained, it needs to be evaluated to assess its performance and generalization ability. Performance metrics such as accuracy, precision, recall, F1-score, and area under the curve (AUC) are used to quantify the model's effectiveness in making predictions or decisions.Model Deployment: Once the AI model meets the desired performance criteria, it can be deployed into production environments to perform real-world tasks. Deployment involves integrating the model into existing systems, such as mobile apps, web services, or embedded devices, to provide AI-driven functionalities.Continuous Learning and Improvement: AI systems can adapt and improve over time through continuous learning. They can be updated with new data and retrained periodically to stay relevant in dynamic environments. Techniques like online learning, transfer learning, and reinforcement learning enable AI models to learn from new experiences and feedback.Inference and Decision-Making: During inference, the trained AI model applies its learned knowledge to make predictions or decisions on new, unseen data. Inference involves feeding input data into the model and obtaining output predictions or classifications based on the model's learned patterns and representations.Overall, AI systems work by leveraging data, algorithms, and computational power to learn from experience, make predictions, and perform tasks that traditionally require human intelligence. The field of AI is rapidly evolving, and new techniques and applications are being discovered at a rapid pace.

of the most common uses of AI are:Healthcare: AI is used in healthcare for various purposes such as diagnosing diseases, predicting patient outcomes, drug discovery, and personalized treatment plans.Finance: AI is used in the finance industry for tasks such as credit scoring, fraud detection, portfolio management, and financial forecasting.Retail: AI is used in the retail industry for applications such as customer service, demand forecasting, and personalized marketing.Manufacturing: AI is used in manufacturing for tasks such as quality control, predictive maintenance, and supply chain optimization.Transportation: AI is used in transportation for optimizing routes, improving traffic flow, and reducing fuel consumption.Education: AI is used in education for personalizing learning experiences, improving student engagement, and providing educational resources.Marketing: AI is used in marketing for tasks such as customer segmentation, personalized recommendations, and real-time audience analysis.Gaming: AI is used in gaming for developing intelligent game characters and providing personalized gaming experiences.Security: AI is used in security for tasks such as facial recognition, intrusion detection, and cyber threat analysis.Natural Language Processing (NLP): AI is used in NLP for tasks such as speech recognition, machine translation, and sentiment analysis. These are some of the most common uses of AI, but the Applications of AI are constantly expanding, evolving, and it is likely that new uses will emerge in the future.Future of AIThe future of AI is likely to involve continued advancements in machine learning, natural language processing, and computer vision, which will enable AI systems to become increasingly capable and integrated into various aspects of our lives. Some of the key trends and challenges in the future of AI include:Increased capabilities: AI systems will continue to become more powerful and capable, with the ability to perform tasks that were previously considered impossible or extremely difficult for humans.Ethical considerations: As AI becomes more powerful and integrated into our lives, it will raise important ethical questions about privacy, security, and the potential for misuse. Ensuring that AI is developed and used responsibly will be a major challenge in the future of AI.Employment and economic impact: The widespread adoption of AI is expected to have significant impacts on the labor market and the economy. While AI will create new jobs and opportunities, it will also displace some jobs, leading to concerns about unemployment and income inequality. Addressing these challenges will require proactive measures, such as retraining and education for workers affected by automation and AI integration.Regulatory and governance: As AI becomes more powerful and integrated into our lives, it will be subject to increasing regulatory scrutiny and governance. Governments and organizations will need to develop frameworks and policies to ensure that AI is used responsibly and for the benefit of society. These are some of the key trends and challenges in the future of AI, and it is likely that the field will continue to evolve rapidly in the coming years.

implications that need to be addressed. It is also expected that there will be more research and development in areas such as explainable AI, trustworthy AI, and AI safety to ensure that AI systems are transparent, reliable and safe to use. The Motorsport Images Collections captures events from 1895 to today's most recent coverage.Discover The CollectionCurated, compelling, and worth your time. Explore our latest gallery of Editors' Picks.Browse Editors' FavoritesExperience AI-Powered CreativityThe Motorsport Images Collections captures events from 1895 to today's most recent coverage.Discover The CollectionCurated, compelling, and worth your time. Explore our latest gallery of Editors' Picks.Browse Editors' FavoritesExperience AI-Powered CreativityJobs Companies Articles Tracker Share - copy and redistribute the material in any medium or format for any purpose, even commercially. Adapt - remix, transform, and build upon the material for any purpose, even commercially. The licensor cannot revoke these freedoms as long as you follow the license terms. Attribution - You must give appropriate credit, provide a link to the license, and indicate if changes were made. You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use. ShareAlike - If you remix, transform, or build upon the material, you must distribute your contributions under the same license as the original. No additional restrictions - You may not apply legal terms or technological measures that restrict others from doing anything that the license permits. You do not have to comply with the license for elements of the material in the public domain or where your use is permitted by an applicable exception or limitation. No warranties are given. The license may not give you all the permissions needed by your intended use. For example, you may need to obtain additional permissions from copyright holders to apply the license to certain parts of the material. For more information on the license, please visit the Creative Commons website. Some applications, ranging from facial recognition to language translators and assistants like Siri and Alexa, that we barely notice it. Along with these consumer applications, companies across sectors are increasingly harnessing AI's power in their operations. Embracing AI promises considerable benefits for businesses and economies through its contributions to productivity growth and innovation. At the same time, AI's impact on work is likely to be profound. Some occupations as well as demand for some skills will decline, while others grow and many change as people work alongside ever-evolving and increasingly capable machines. This briefing pulls together various strands of research by the McKinsey Global Institute into AI technologies and their uses, limitations, and impact. It was compiled for the Tallinn Digital Summit that took place in October 2018. The briefing concludes