

# Artificial Intelligence The impact on the IT organization

**Financial World of Information  
Technologies**

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# What is AI

## Definition of Artificial Intelligence (AI)

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Artificial Intelligence (AI) refers to the development of computer systems capable of performing tasks that typically require human intelligence. These tasks include reasoning, learning, problem-solving, perception, and language understanding<sup>1</sup>. AI systems can process vast amounts of data, identify patterns, and make decisions based on the collected information<sup>2</sup>

# Key Components of AI

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**Learning:** AI systems can learn from data through techniques like machine learning and deep learning. This involves training models on large datasets to recognize patterns and make predictions<sup>1</sup>.



**Reasoning:** AI can apply logical rules to data to derive conclusions and make decisions. This is often used in expert systems and decision support systems<sup>1</sup>.



**Problem-Solving:** AI can solve complex problems by breaking them down into smaller, manageable tasks and finding optimal solutions<sup>1</sup>.



**Perception:** AI systems can interpret sensory data, such as images and sounds, to understand the environment. This is achieved through computer vision and speech recognition<sup>2</sup>.



**Language Understanding:** AI can process and understand human language through natural language processing (NLP), enabling it to interact with humans in a meaningful way<sup>2</sup>.

# Examples of how we use AI

**Healthcare:** AI is used for diagnosing diseases, predicting patient outcomes, and personalized treatment plans<sup>2</sup>.

**Finance:** AI aids in credit scoring, fraud detection, and financial forecasting<sup>2</sup>.

**Retail:** AI enhances customer service, demand forecasting, and personalized marketing<sup>2</sup>.

**Transportation:** AI optimizes routes, improves traffic flow, and powers autonomous vehicles<sup>2</sup>.

# AI vs. human intelligence: Three important differences

AI		HUMAN INTELLIGENCE
May require millions or billions of samples to learn at a level exceeding average human intelligence, making humans on average more efficient learners than AI systems.	<b>One-shot vs. multishot learning</b>	Ability to learn new concepts and ideas from a small number of samples, sometimes from a single one. This ability is referred to as one-shot learning.
Ability to recite, recalling information as it was presented or generating a novel mashup of information that some refer to as imagination but is better described as synthetic recitation.	<b>Imagination and recitation</b>	Ability to form ideas, mental sensations and concepts of phenomena that are not present and/or do not exist is considered an important element of being human.
In 2023, most artificial intelligence systems do not possess multimodal learning ability. Autonomous vehicles, however, are able to receive inputs from multiple types of sources to make navigational decisions.	<b>Multisensory input and output</b>	Ability to receive and quickly integrate information from all of our senses and use that perception to make decisions. The average human is able to incorporate multimodal inputs and create multimodal outputs.

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## What is AI? Artificial Intelligence explained

By [Lev Craig](#), Site Editor [Nicole Laskowski](#), Senior News Director

[Linda Tucci](#), Industry Editor -- CIO/IT Strategy

'BENEDICT CUMBERBATCH IS OUTSTANDING'



'A SUPERB  
THRILLER'



'THE BEST BRITISH  
FILM OF THE YEAR'



'AN INSTANT  
CLASSIC'



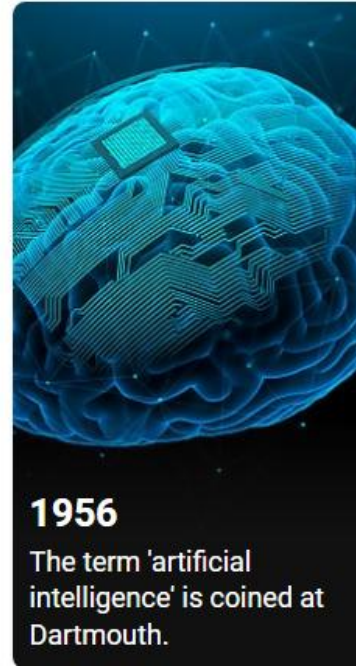
BENEDICT CUMBERBATCH      **THE**      KEIRA KNIGHTLEY  
**IMITATION GAME**

IN CINEMAS NOVEMBER 14

## The Imitation Game - 2014

- Based on the biography of cryptanalyst Alan Turing. Who authored a paper answering the question "Can machines think?", .1950 "[Computing Machinery and Intelligence](#)". Turing decrypted German intelligence messages for the British government during WWII

# The AI Timeline



# The AI Timeline



**2004**

DARPA Grand Challenge  
spurs autonomous vehicle  
research.



**2011**

IBM's Watson wins  
Jeopardy! against human  
opponents.



**2016**

Google's AlphaGo beats  
Go champion Lee Sedol.

Credit (and Kudos!) to Shushant Lakyani who shared this very information set of definitions on LinkedIn

# 10 AI Algorithms Even A 12-Year-Old Can Grasp



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## 1 Linear Regression

**Explanation:** It draws a straight line through dots on a chart to guess what might happen next based on what's already happened.

**Example:** Predicting your height next year by looking at how much you've grown each year.



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## Logistic Regression

**Explanation:** It helps make smart yes or no decisions by learning from examples where the answer is already known.

**Example:** Figuring out whether an email is spam or not based on words used in the message.



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# How AI Works

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## Decision Tree

**Explanation:** It asks a bunch of yes or no questions to reach an answer, like a flowchart that leads to the right decision.

**Example:** Helping figure out what animal you're thinking of based on clues like "Does it fly?" or "Does it live in water?"



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## Random Forest

**Explanation:** It's a bunch of decision trees that work together like a team, then vote on the best answer.

**Example:** Predicting what kind of fruit you're holding based on color, size, and shape.



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# How AI Works

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## K-Nearest Neighbors (KNN)

**Explanation:** It looks at its closest friends (data points) and does what most of them are doing.

**Example:** Guessing what sport you like based on what your classmates enjoy.



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## Support Vector Machine (SVM)

**Explanation:** It finds the best line or border to separate things into two different groups.

**Example:** Drawing a line to separate apples from oranges based on their color and size.



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# How AI Works

# How AI Works

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## Naive Bayes

**Explanation:** It makes smart guesses based on how often things happen together in the past, like playing detective with clues.

**Example:** Predicting whether someone likes ice cream if they also like cake and cookies.



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## K-Means Clustering

**Explanation:** It puts things into groups by looking at what's most similar, kind of like sorting your toys into bins.

**Example:** Grouping your art supplies into crayons, markers, and colored pencils.



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## Reinforcement Learning

**Explanation:** It learns by trying things and getting rewarded or punished, like training a puppy with treats.

**Example:** Teaching a robot to play a game by giving it points for every good move it makes.



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## Neural Networks

**Explanation:** It's a system that tries to think like a brain, learning patterns from lots of data to get better over time.

**Example:** Learning to recognize your face in photos, even when you're wearing sunglasses.



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# How AI Works

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# Discover Hidden Digital Gems For Free

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# 10 BEST AI COMPANIES TODAY

1. AMAZON-Alexa
2. GOOGLE-Alphabet
3. APPLE-SIRI
4. FACEBOOK-tailoring ads
5. MICROSOFT-Azure development, Cortana, Bing
6. ORACLE – ERP, AI platform (developers)
7. INTEL-hardware, software tools
8. NVIDIA-Hardware, GPU Graphic Processing Units
9. SAMSUNG-AI Research investments, BIXBY
10. IBM- Watson healthcare and science

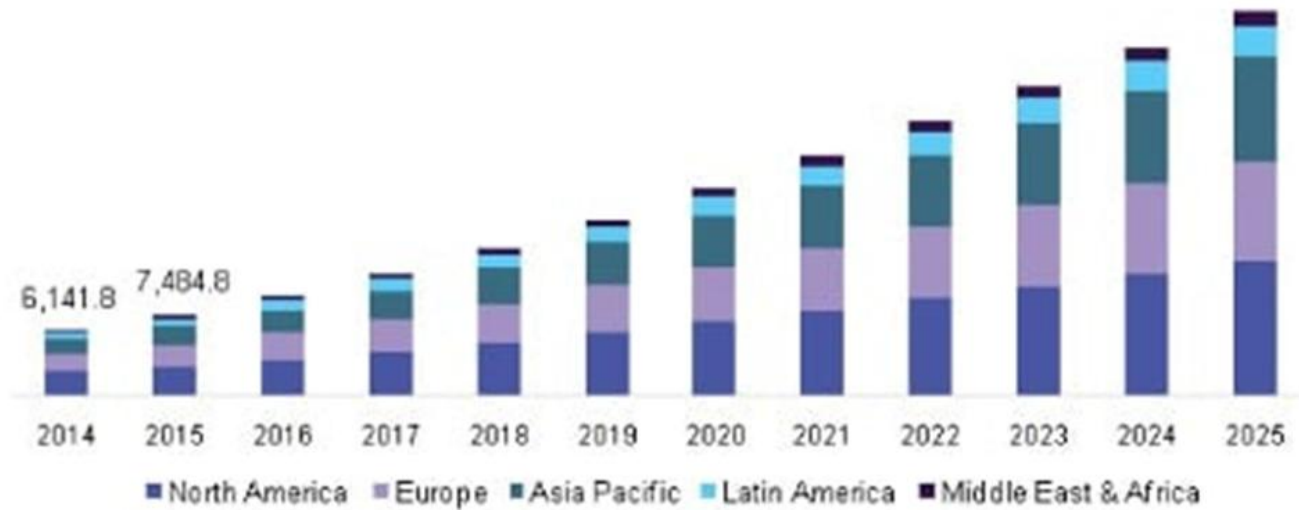


# Data Center Expansion

- Increasing demand for storage
- Faster processing capabilities
- Locations driven by Power availability
- Changing technology for cooling

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Global spending on big data and business analytics is expected to increase at a compound annual growth rate (CAGR) of 14.9% from 2024 to 2030.



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# HARDWARE DEMANDS TO SUPPORT AI CONTINUE TO GROW

- One estimate is that server sales will triple from 2023 to 2028 to make way for AI experimentation and innovation.
- Gartner experts expect IT software to increase 14% and IT services to experience 9.4% growth. In fact, experts at IDC project that global AI spending will surpass \$200 billion in 2025.

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# IMPACTS ON SECURITY AND COMPLIANCE

Cyber threats are not just growing. They're exploding: The average number of cyberattacks per organization per week reached 1,636, a staggering 30% increase year over year.

Most of the rise in cyber threats is related to advances in AI, especially generative AI (GenAI) technologies.

These technologies gave cybercriminals tools to increase their attack sophistication, including ransomware and phishing schemes.

In response to the acceleration of cybercrime, many public regulatory bodies have created stricter laws and regulations to protect their citizens.

SPLUNK  
NOVEMBER 25, 2024 IT AND TECHNOLOGY SPENDING TRENDS FO 2025

# AI means recruiting/learning new skills



AI and ML skills growth. The rapid adoption of AI, machine learning, and cloud computing has created a significant demand for specialized skills in these areas.



Companies like Amazon and Cognizant are ramping up investments in upskilling programs to improve their workforce skills.



Amazon announced it plans to spend over \$1.2 billion to upskill 300,000 workers by 2025 through offering university tuition, career coaching, and certifications.



Likewise, Cognizant plans to train over 200,000 employees in digital skills by partnering with educational institutions and companies like Google

# AI and Machine Learning Integration



## Enhanced Forecasting Accuracy

AI and machine learning improve the accuracy of financial forecasts, allowing businesses to make informed financial decisions.



## Automated Data Analysis

The integration of AI automates data analysis processes, reducing human error and saving time for financial managers.



## Strategic Financial Decision-Making

By leveraging AI insights, organizations can enhance their strategic decision-making processes in financial management.

# What AI benefits might you see in your position?

Forecasting

Reporting

Budgeting

Analysis

Alerts

Presentations

Decision  
Making

# Thank You!

