

# AI

*IS THE FUTURE ALREADY IN OUR PRESENT?*

# WHAT DOES INTELLIGENCE MEANS?

Intelligence is the faculty of the mind that allows it to learn, understand, reason, make decisions, create, think and form a certain idea of reality.

# THEN... WHAT DOES AI MEANS?

The term AI is applied to systems that display intelligent behavior, as they are capable of analyzing their environment and taking action with a certain degree of autonomy in order to accomplish tasks or objectives efficiently, and may even equal or exceed the physical and cognitive capacities of the human being.



## AI IN THE PRESENT

Artificial Intelligence today is seen as a commercial advantage that facilitates different methods and processes, as well as the implementation of algorithmic models, the analysis of data and behaviors, the creation of expert systems, the growth of global productivity. and development and innovation in sectors of great importance. (Herbert. K, 2019)

## AI IN THE FUTURE

The future of Artificial Intelligence generates a lot of dialogue and uncertainty, vision and promises, since as it progresses, new applications, services and processes emerge in all kinds of fields and disciplines, opening up future elements to regulate and supervise.



# TYPES OF AI

At present, AI is qualified and classified through the following ways:

ANI: Narrow Artificial Intelligence also known as the weak type of AI and the only one in our world until today. ANI is programmed to perform single tasks based on information pulled from a specific data set. *ex. smart speakers, self-driving , automated robots, search engines, chatbots, and many other programmed tools.*

AGI: Artificial General Intelligence, also known as Strong AI, is the type of AI that can understand or learn any cognitive task that a human being can. *no news yet 2022.*

ASI: Artificial Super Intelligence or Hyper intelligence, is a term referring to the computer's capability to surpass humans intellectuality and cognitivity with the help of its own conscience. *no news yet 2022.*



# AI VALUE

In addition to offering innovative and transcendent value, AI is having huge monetary impacts in several sectors.

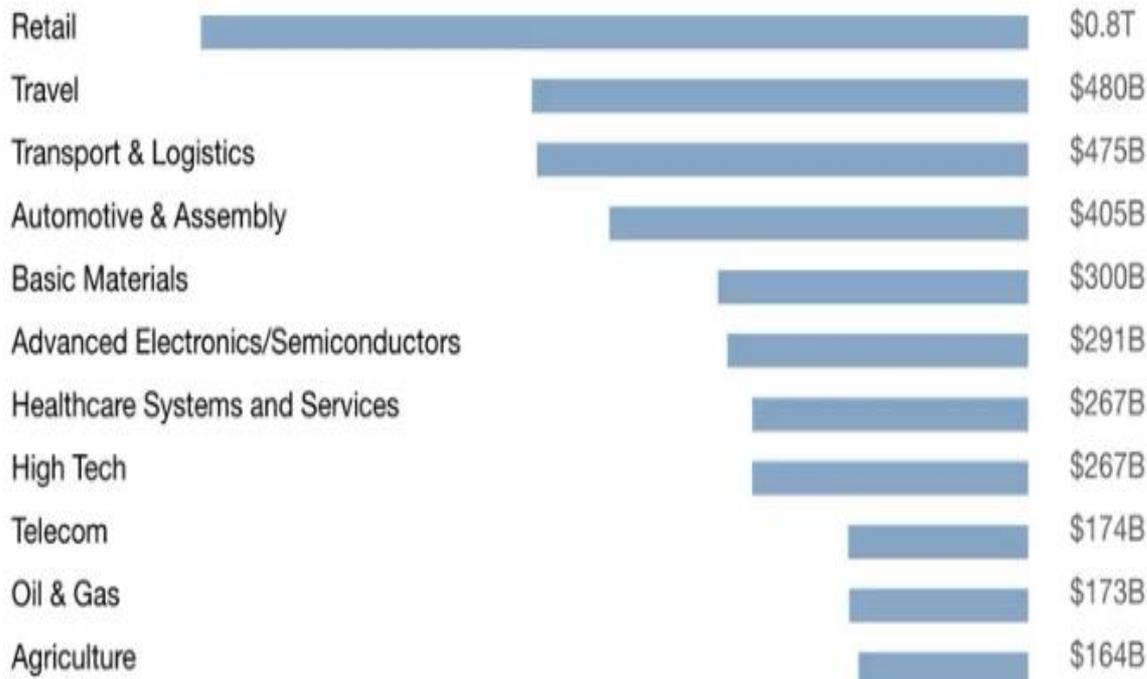
According to a study by Mckinsey Global Institute, AI is estimated to create an additional 13 trillion US dollars of value annually by the year 2030. Even though AI is already creating a large amount of value into software industry, a lot of the value to be created in the future lies outside the software industry emerging into many other industries, fields and sectors that can make use and benefit from it.

Next, the study done by Mckinsey Global Institute, interpreted and presented by Andrew Ng as a Computer Science Department Professor through his course 'AI for everyone' taught in deeplearning.ai (Yan-Tak Ng. A, 2019)



AI value creation  
by 2030

**\$13**  
**trillion**

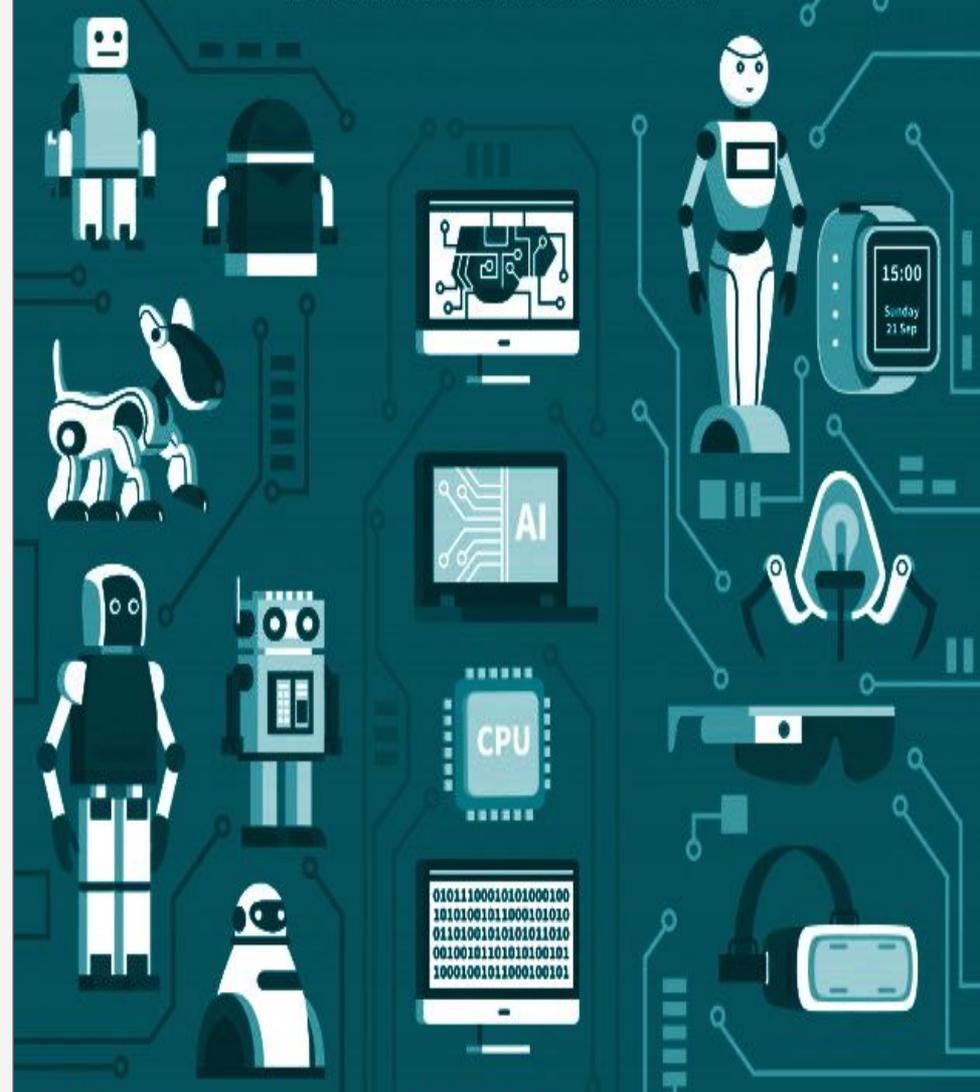


# AI APPLICATIONS

Artificial intelligence is designed to be applied in many different ways, ways, and scopes. Today, some of the AI applications we've heard about most frequently are vehicle autonomy, paging systems, virtual assistants, expert systems, data mining, video games, robotics, and even the creation of essays, poems, stories and paintings.

# AI GOALS

What most of the companies that invest or implement these technologies in their businesses or processes are mainly trying to achieve is innovation, management, productivity, autonomy, efficiency and savings. (Chandra Yadav. V, 2016)



# MACHINE LEARNING

Machine learning is a branch of artificial intelligence that provides systems with the ability to learn and improve from knowledge and data processing through algorithms.

Likewise, ML is divided into supervised and unsupervised. Supervised learning consists of a set of labeled data that helps the machine learn automatically. Instead, the unsupervised uses unlabeled data sets.

# DEEP LEARNING

Deep learning is another branch of AI that attempts to perform tasks as humans do, using data abstractions and computational architectures that support multiple and iterative nonlinear transformations of data expressed in matrix or tensor form.



# AI TOOLS

Artificial intelligence is not a magical or random effect. Behind each application there is a variety of tools designed and programmed to fulfill the activities, tasks, operations, functions and assignments related to its mission and implementation.

These tools can be programmed and designed through various datasets and algorithms, either automatically or manually. Also, these tools can be subsequently transferred, installed or executed in equipments, systems or machines that have the appropriate capabilities to run them properly within their characteristics and properties.

Some of the most relevant or common tools in terms of AI nowadays are the following:



# DATA SCIENCE

Data science is a multidisciplinary combination of data inference, algorithm development, and technology to solve analytically complex problems. Furthermore, data science unifies big data, machine learning, and their related methods in order to suggest and implement useful solutions for given problems and circumstances.

## EXAMPLES

- Exploratory analysis
- Forecast
- Grouping
- Synthesis
- Strategy

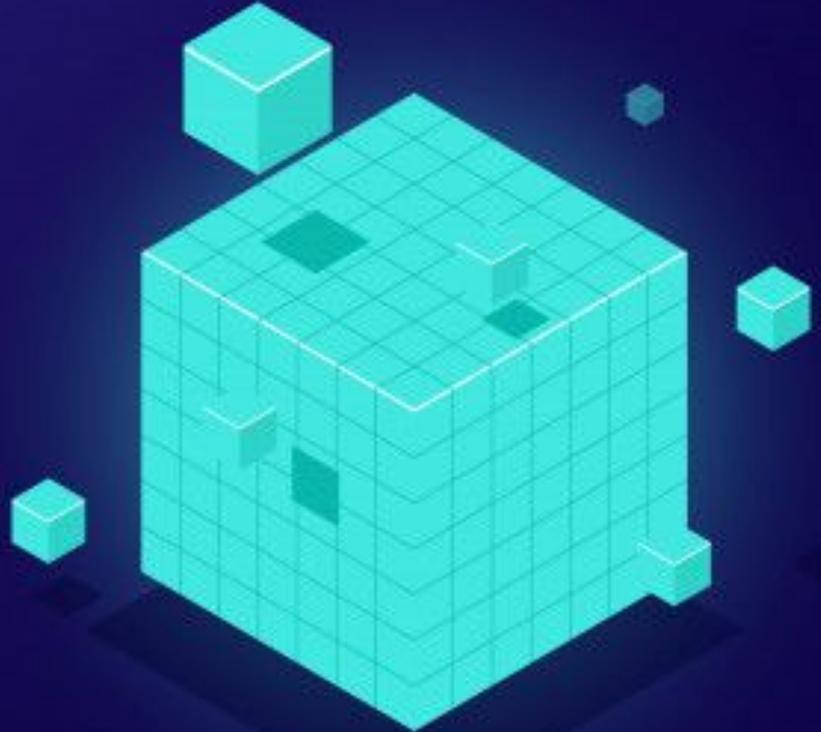


# LOGISTICS

Logistics is the ability and capacity of the system, equipment, or machine to organize, classify, manage, or position tasks, assignments, and activities through the means or methods necessary for their successful performance and completion in the appropriate time and space.

## EXAMPLES

- Assistance
- Tracking
- Scheduling
- Transportation
- Assignment



# REASONING

This tool is generally found in any type of AI that is capable of building a body of strategies in which it has the ability to identify significant patterns, relate them, and solve problems through various cognitive processes, under any situation or flow of information.

## EXAMPLES

- Deduction
- Inference
- Structuring
- Justification
- Execution



# NATURAL LANGUAGE PROCESSING

Natural language processing is a subfield of linguistics, computer science, information engineering, and artificial intelligence concerned with the interaction between computers and human languages. Particularly, it consists of the way or technique of programming systems, equipment or machines to process, store and analyze large amounts of natural language data through codes, algorithms, inputs and outputs converted into grammatical language.

## EXAMPLES

- Filtration
- Translation
- Search
- Understanding
- Syntax

```
static void initCURL(curl *curl, const char *url, const char *errorBuffer)
{
    CURLcode code;
    conn = curl_easy_init();
    if (conn == NULL)
    {
        fprintf(stderr, "Failed to create CURL connection\n");
        exit(EXIT_FAILURE);
    }
    code = curl_easy_setopt(conn, CURLOPT_ERRORBUFFER, errorBuffer);
    if (code != CURLE_OK)
    {
        fprintf(stderr, "Failed to set error buffer [%d]\n", code);
        return false;
    }
    code = curl_easy_setopt(conn, CURLOPT_URL, url);
    if (code != CURLE_OK)
    {
        fprintf(stderr, "Failed to set URL [%s]\n", url);
        return false;
    }
    code = curl_easy_setopt(conn, CURLOPT_FOLLOWLOCATION, 1L);
    if (code != CURLE_OK)
    {
        fprintf(stderr, "Failed to set redirect option [%s]\n", url);
        return false;
    }
    code = curl_easy_setopt(conn, CURLOPT_WRITEFUNCTION, writer);
    if (code != CURLE_OK)
    {
        fprintf(stderr, "Failed to set writer [%s]\n", url);
        return false;
    }
    code = curl_easy_setopt(conn, CURLOPT_WRITEDATA, &buffer);
    if (code != CURLE_OK)
    {
        fprintf(stderr, "Failed to set write data [%s]\n", url);
        return true;
    }
}

static void writeElement(void *voidContext, const xmlChar *name, const xmlChar **attributes)
{
    Context *context = (Context *)voidContext;
    if (COMPARE((char *)name, "TITLE"))
    {
        context->title = "";
        context->addTitle = true;
    }
    (void) attributes;
}

static void EndElement(void *voidContext, const xmlChar *name)
{
    Context *context = (Context *)voidContext;
    if (COMPARE((char *)name, "TITLE"))
        context->addTitle = false;
}

// Text handling helper function
static void handleCharacters(Context *context, const xmlChar *chars, int length)
{
    if (context->addTitle)
        context->title.append((char *)chars, length);
}

// libxml PCDATA callback function
static void Characters(void *voidContext, const xmlChar *chars, int length)
{
    Context *context = (Context *)voidContext;
    handleCharacters(context, chars, length);
}

static void odata(void *voidContext, const xmlChar *chars, int length)
{
    Context *context = (Context *)voidContext;
    handleCharacters(context, chars, length);
}
```

# PERCEPTION

In Artificial Intelligence, perception appears when a system, equipment or machine has the ability to use multiple components, abstractions and computational architectures to identify the environment in which it is located or established, thus creating a virtual concept of reality.

## EXAMPLES

- Identification
- Detection
- Scanning
- Monitoring
- Assembly



# INTELLIGENT SEARCH

Intelligent search is the ability or capacity that Artificial Intelligence has to receive and manage information to resolve any type of query assigned by a user.

## EXAMPLES

- Navigation
- Support
- Research
- Collection
- Structuring



# RECOGNITION

AI recognition is commonly applied through readers, sensors, and capture fields for security and access control. Normally, this tool is based on the identification of physical and non-transferable characteristics through passwords and standardized measures such as biometrics.

## EXAMPLES

- Encryption
- Authentication
- Personalization
- Surveillance
- Adaptation

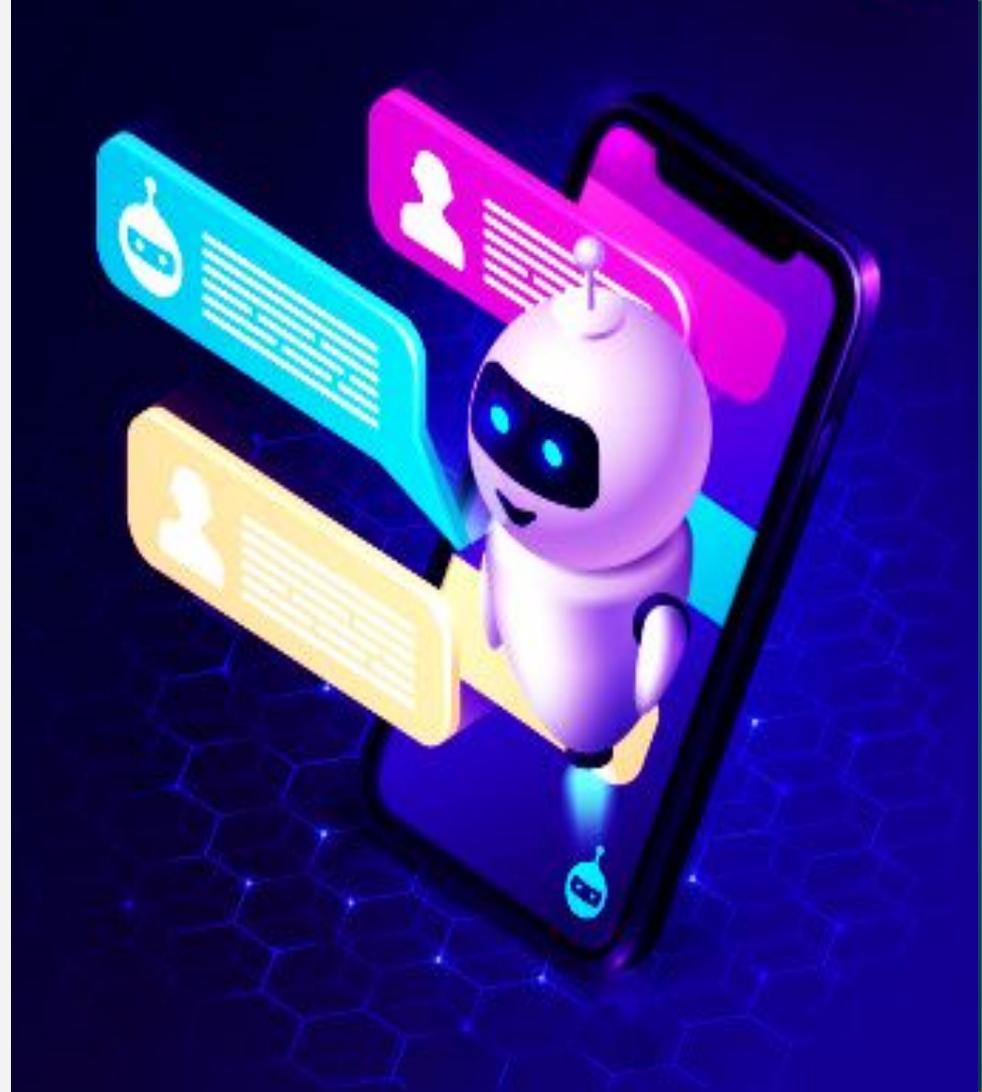


# COMMUNICATION

Communication is the ability of the system, machine or equipment to transmit and receive knowledge automatically, allowing humans to interact with digital devices as they would with a real person.

## EXAMPLES

- Translation
- Collection
- Prosecution
- Support
- Analysis

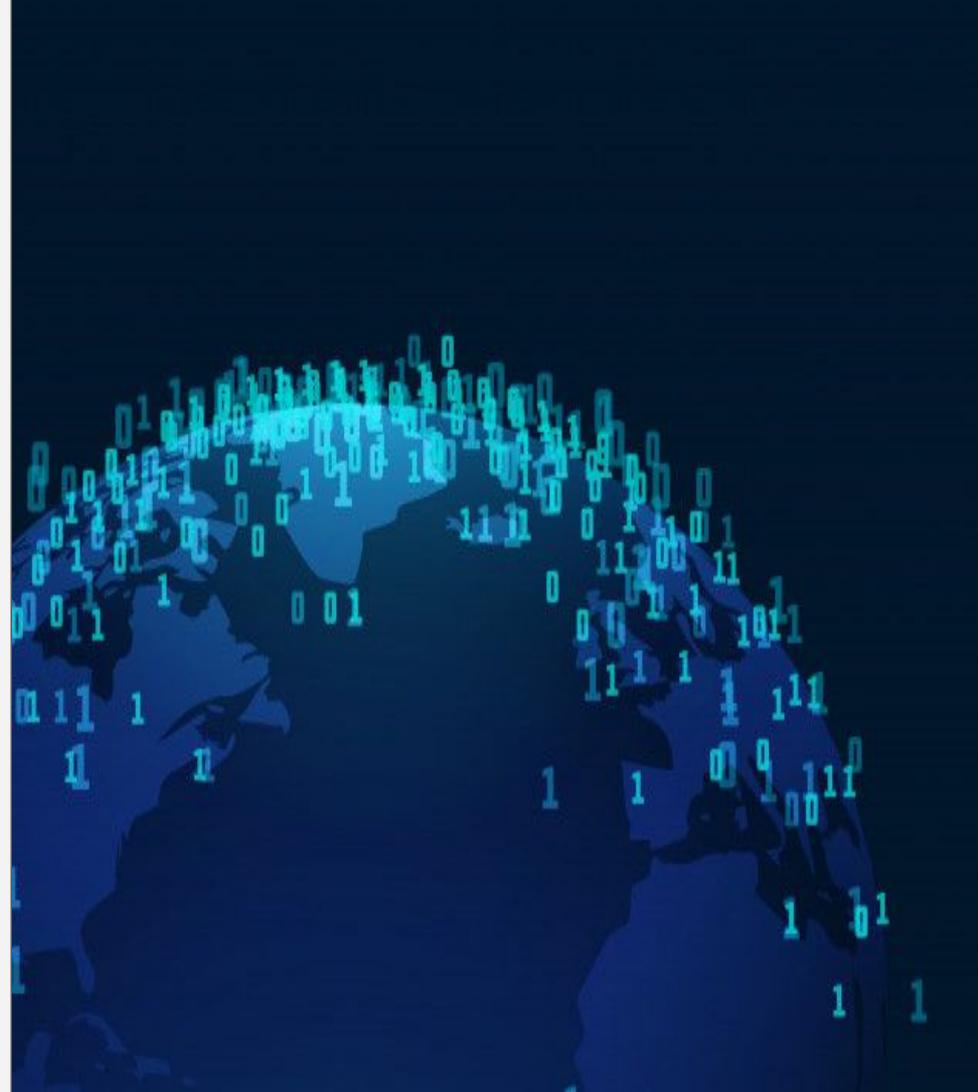


## AI MYTHS

As being something that constantly emerges and evolves, Artificial Intelligence tends to bring surprise, uncertainty, mistrust and fear in its path. Therefore, it is important to discuss, analyze and understand the myths and rumors of AI in the present.

## AI REALITIES

However, it is also important to talk about the realities of these myths, as they may be close or far from becoming facts and leave a small or large, positive or negative impact on our world.



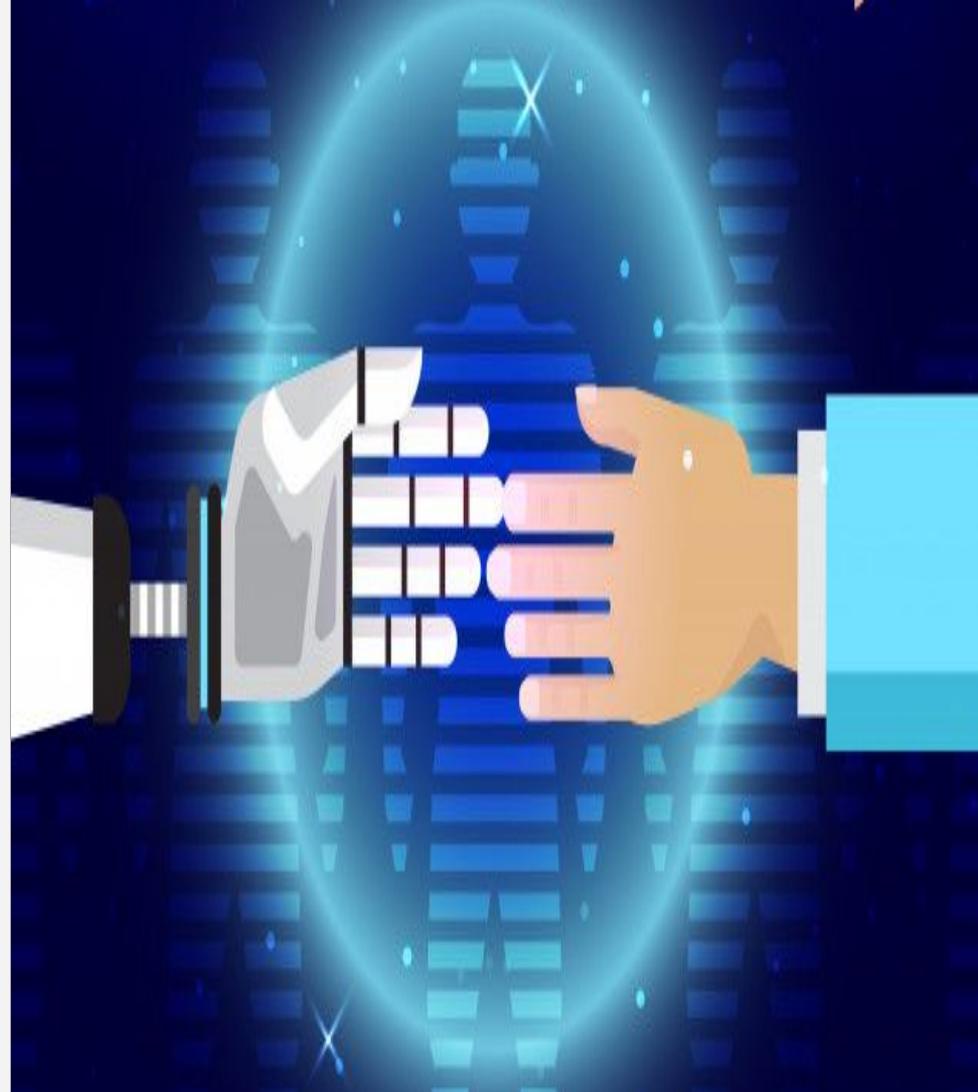
## MYTH #1

We will never create AI equal to human intelligence.

## REALITY

We already have computers that perform almost equal to or better than a human mind in terms of analysis, grammar, synthesis, reasoning, structuring, and execution. Examples of this are Deep Blue and AlphaGo winning matches of chess and Go games against world champions.

In addition, we must take into account that AI is constantly improving and developing in terms of cognition, so it is now more of a reality than a myth.



## MYTH #2

AI will take all our jobs.

## REALITY

Artificial intelligence may not take them all, but there is no doubt that it is poised to displace and replace many jobs such as blue-collar and white-collar jobs.

In the United States alone, some experts predict that half of all jobs will be vulnerable to automation in the near future due to the heavy investment large companies have made to benefit from these technologies and their efficiencies. (Raza. S, 2018)



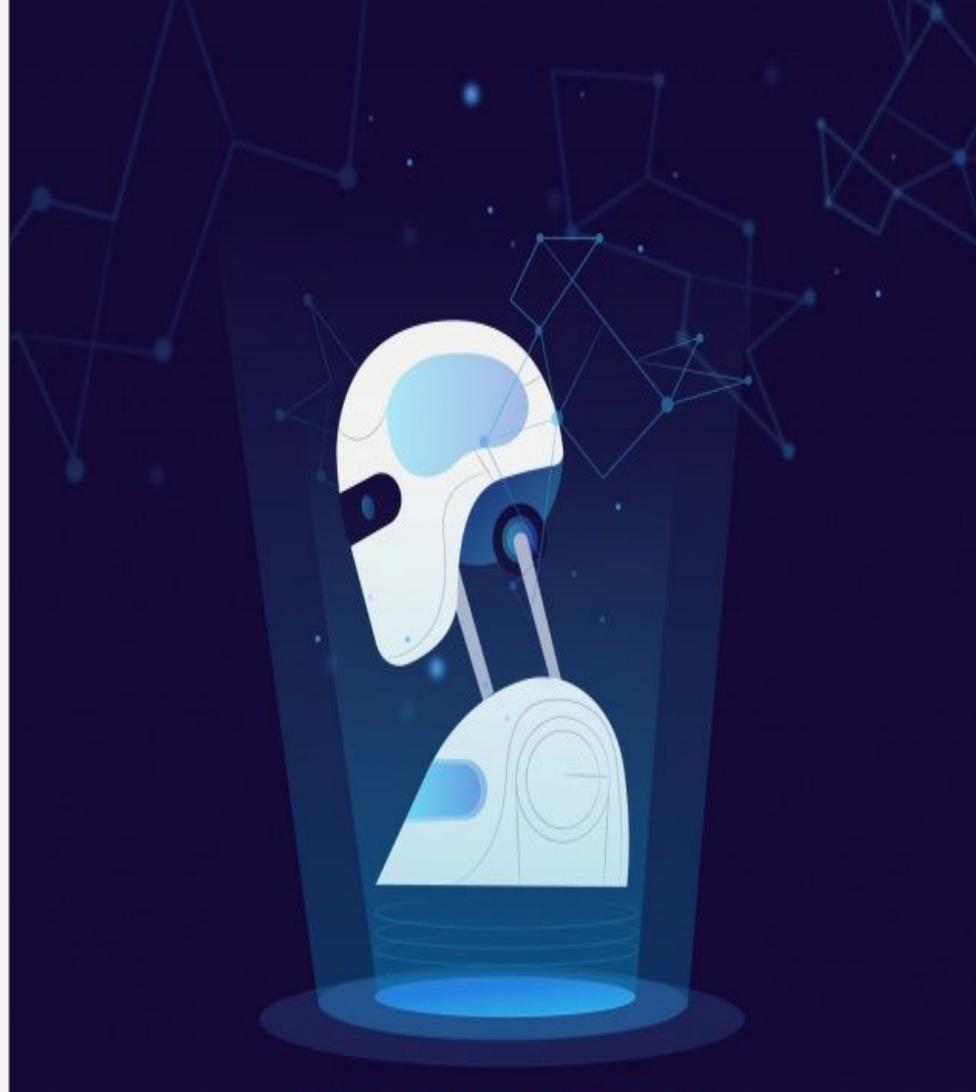
## MYTH #3

Artificial Intelligence will be conscious.

## REALITY

This specific myth generates a lot of uncertainty. A common assumption about AI is that it will be conscious, that is, it will act and think in the same way that humans do.

The truth about this myth cannot be known until a system, piece of equipment or a machine shows signs, characteristics or actions that can be related to consciousness and will. However, we should never doubt about the scope that AI can have in the coming years with its great progress and development.



## MYTH #4

We should be afraid of AI.

## REALITY

No, we should not fear Artificial Intelligence, but what we should do is be aware of what it seeks to do through its use, since like anything and an invention, it can be used to do good or evil, as well as to progress or worsen. So who we really have to fear is anyone who wants to abuse or misuse these technologies.



## MYTH #5

AI is only about making robots.

## REALITY

This myth is absolutely false. AI is a field independent of robotics, whose objective is to create and implement learning algorithms through a variety of formulas, functions, tools and components that are able to use and even improve these technical advantages through different shapes, sizes and presentations.



# WHAT CAN WE EXPECT FROM AI IN THE NEXT YEARS?

It is common to think that while AI is good in terms of assistance and increased intelligence, it is not good enough to surpass our abilities and capabilities.

The reality and most likely is that in the next years AI will exceed our expectations in its development and implementation. However, one thing to consider is that we are dealing with rapidly emerging technologies to create or improve anything they can be applied to, so at the same time they can drive big positive or negative changes, depending on the oversight, standards and regulations for its use



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