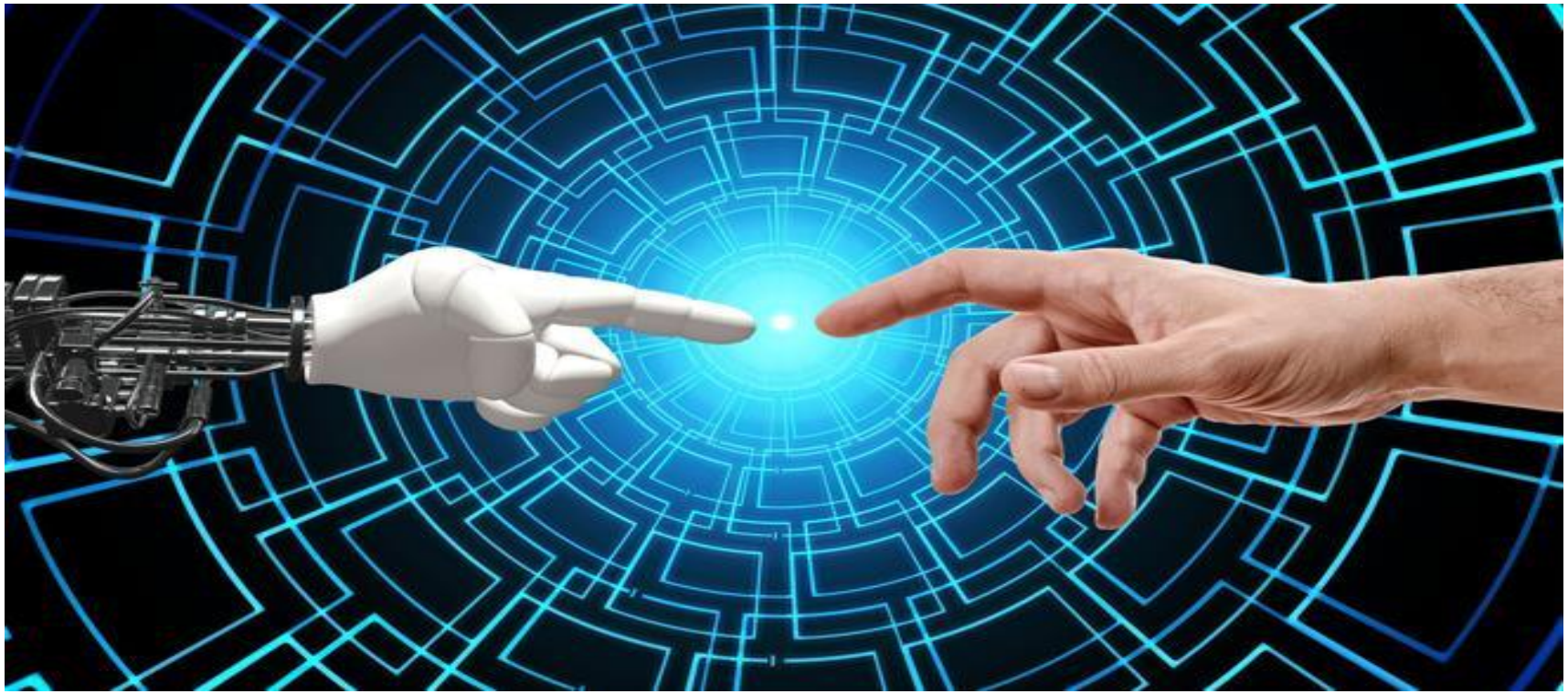
ARTIFICIAL INTELLIGENCE

AI is intelligence demonstrated by machines



What is Artificial Intelligence?

artificial

/ɑːtɪˈfɪʃ(ə)l/

adjective

1. made or produced by human beings rather than occurring naturally, especially as a copy of something natural.

intelligence

/ɪnˈtɛlɪdʒ(ə)ns/

noun

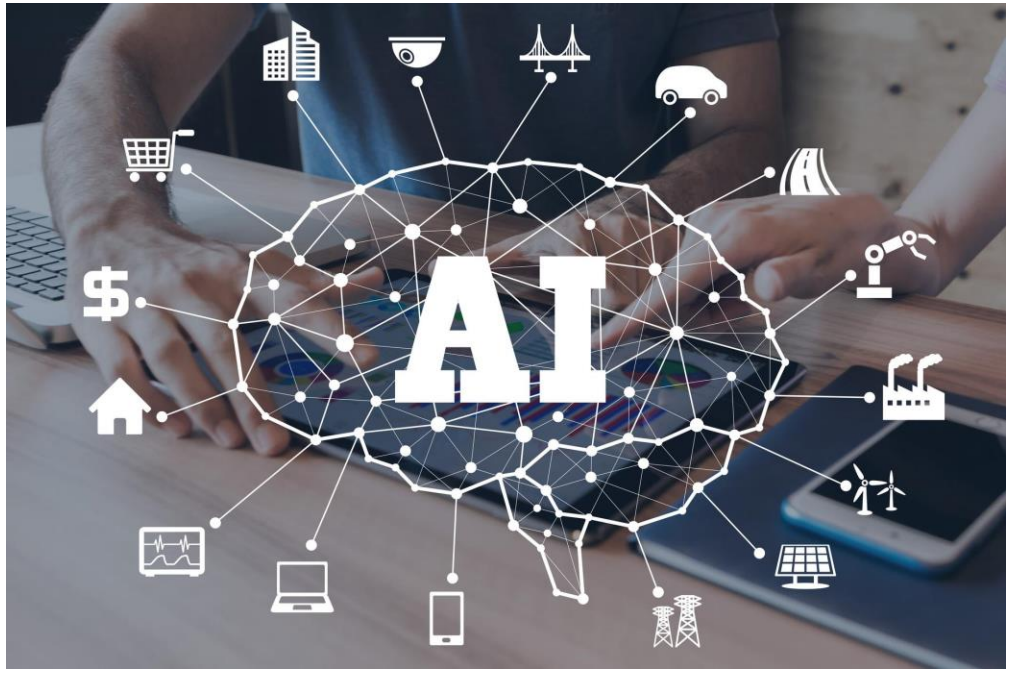
1. the ability to acquire and apply knowledge and skills.

Introduction of Artificial Intelligence

Intelligence : “The capacity to learn and solve problems.”

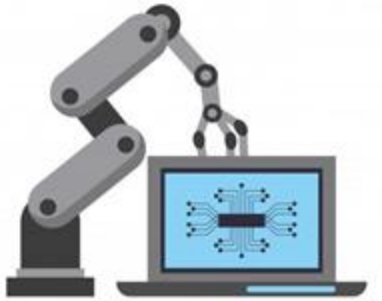
Artificial Intelligence : Artificial Intelligence (AI) is the simulation of human intelligence by machines.

1) The ability to solve problems.
2) The ability to act rationally.
3) The ability to act like humans.



https://www.tu-berlin.de/menue/summer_university/old_versions/winter_university/introduction_to_artificial_intelligence

Why Artificial Intelligence?



Intelligent Automation

Adding to labor and capital

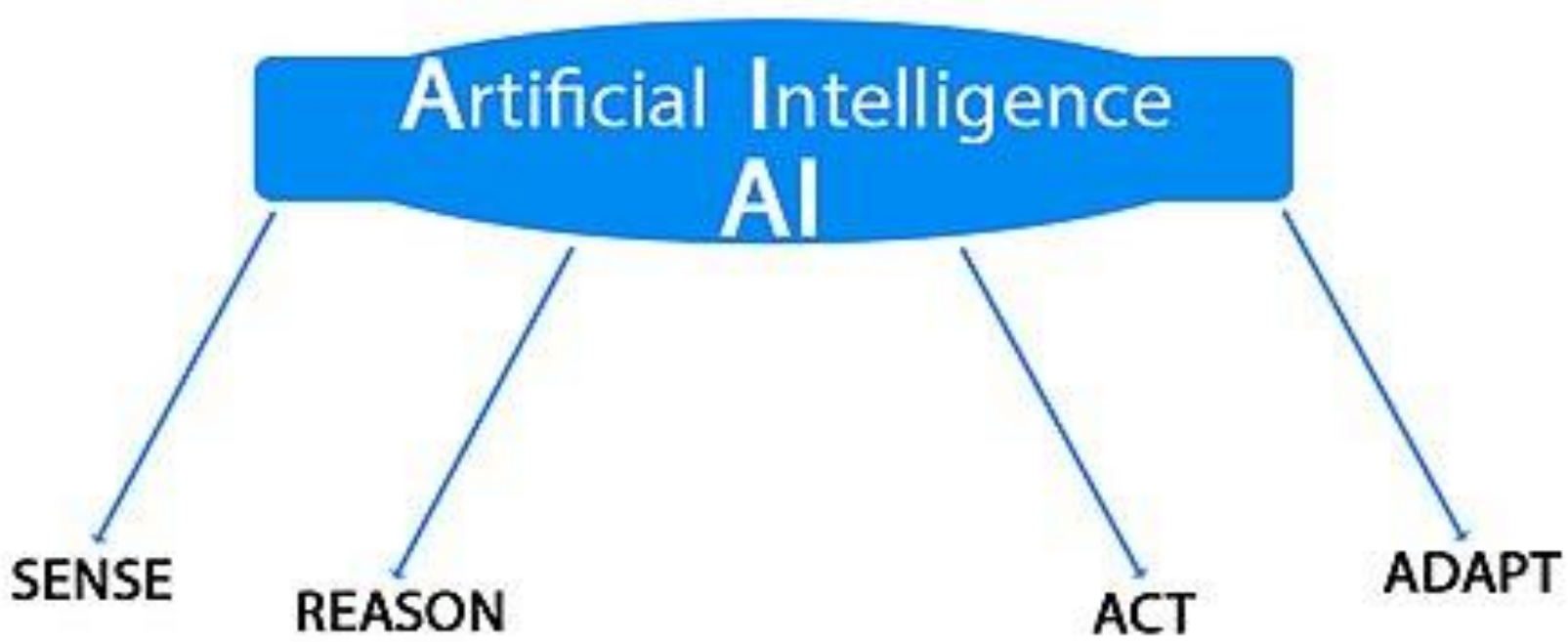
Collaborative Innovation

Boosting the economy

New and exciting solutions

Uses in every sphere of life

What is Artificial Intelligence?



https://en.wikiversity.org/wiki/Artificial_intelligence/Introduction

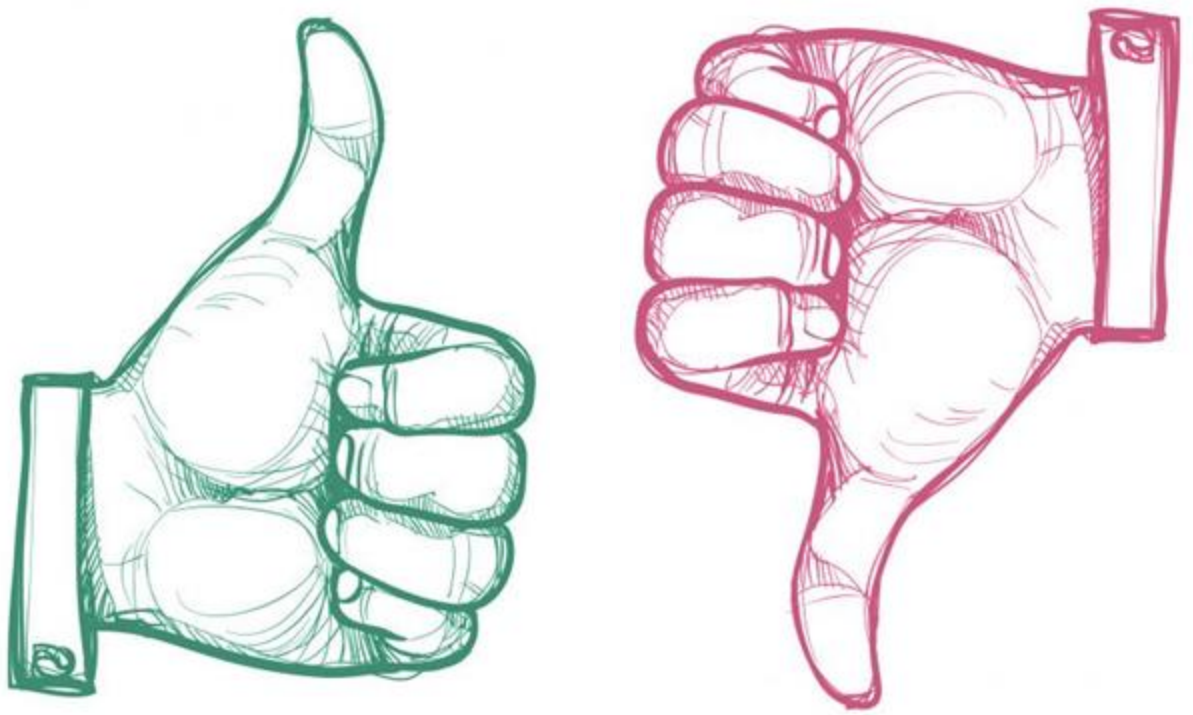
Microsoft SAP edunet foundation

Where is Artificial Intelligence?

Applications of AI

https://techvidvan.com/tutorials/artificial-intelligence-applications/

What AI can and can not do?



What AI can and can not do?

Some examples of things AI can do:

Some examples of things AI can not do:

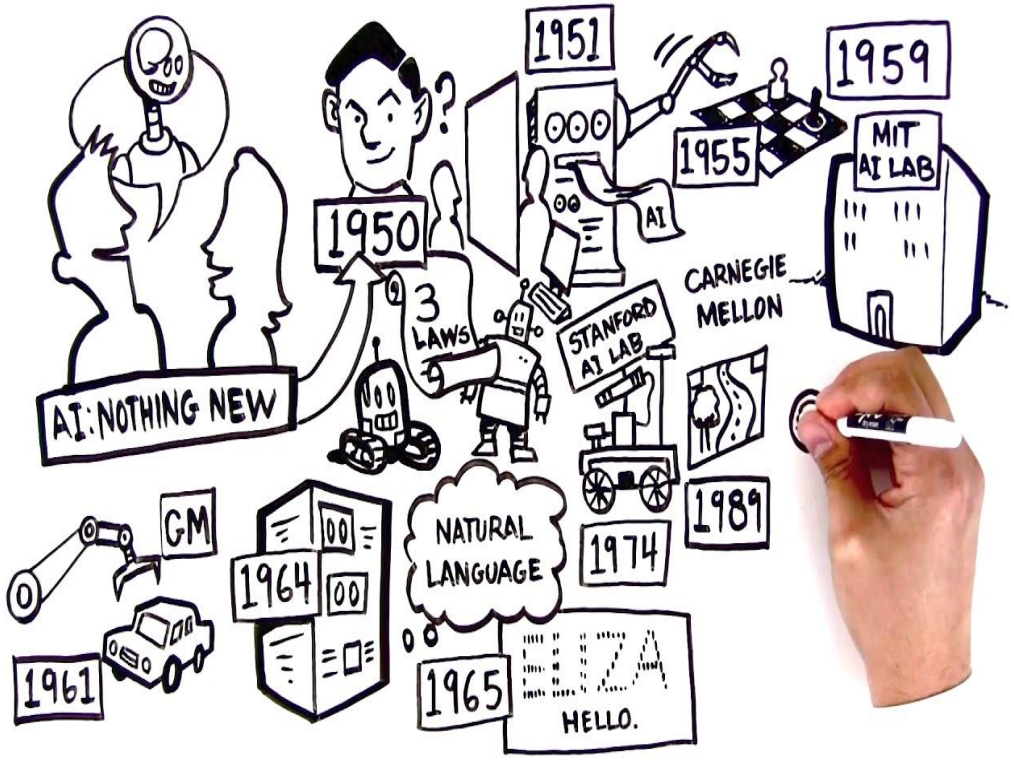
- Decide if a bulb is working or not by looking at it
- Sympathise with humans
- Differentiate between drawings of circles and rectangles
- Manage a workshop with various different machines
- Compare output value of system to a target value
- Get a job in a multinational company
- Identify compatibility with a machine among various parts
- Identify defective products coming out of an assembly line
- Run a social media account of its own
- Decide correct operating temperature and pressure for a new assembly line.

Turing Test

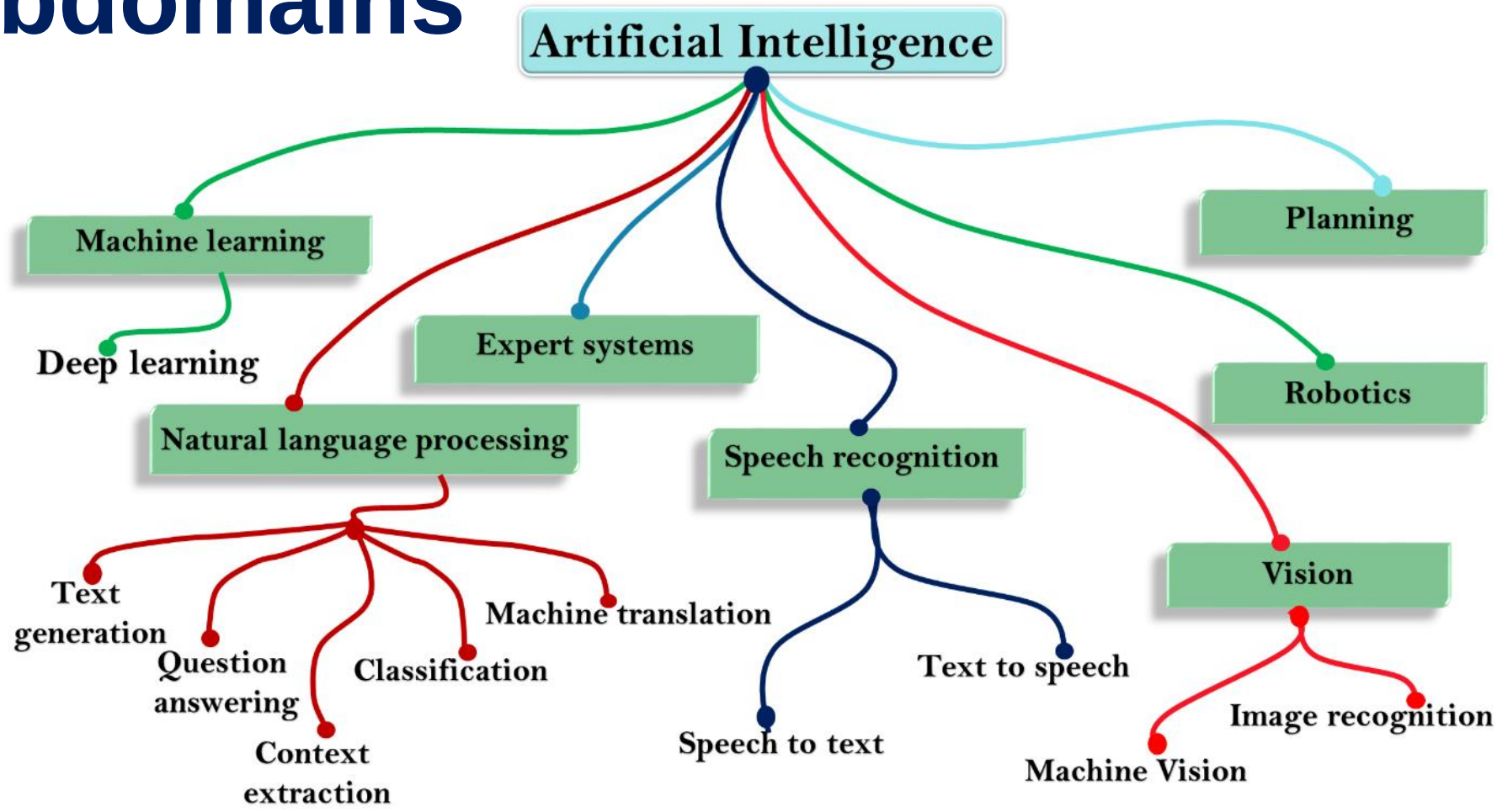
https://images.theconversation.com/files/50549/original/r6zbqvs2-1402296443.jpg

Artificial Intelligence: Past and Present

- **1950s** - Artificial Intelligence was born.
- **Late 1960s to 1970s** - The First AI Winter
- **Early 1980s** - The AI Boom due to development of learning techniques
- **Late 1980s to 1990s** - The Second AI Winter
- **Late 1990s to 2000s** - Renewed success in various fields.
- **2010s to Present** - Modern AI with cutting edge solutions in all walks of life

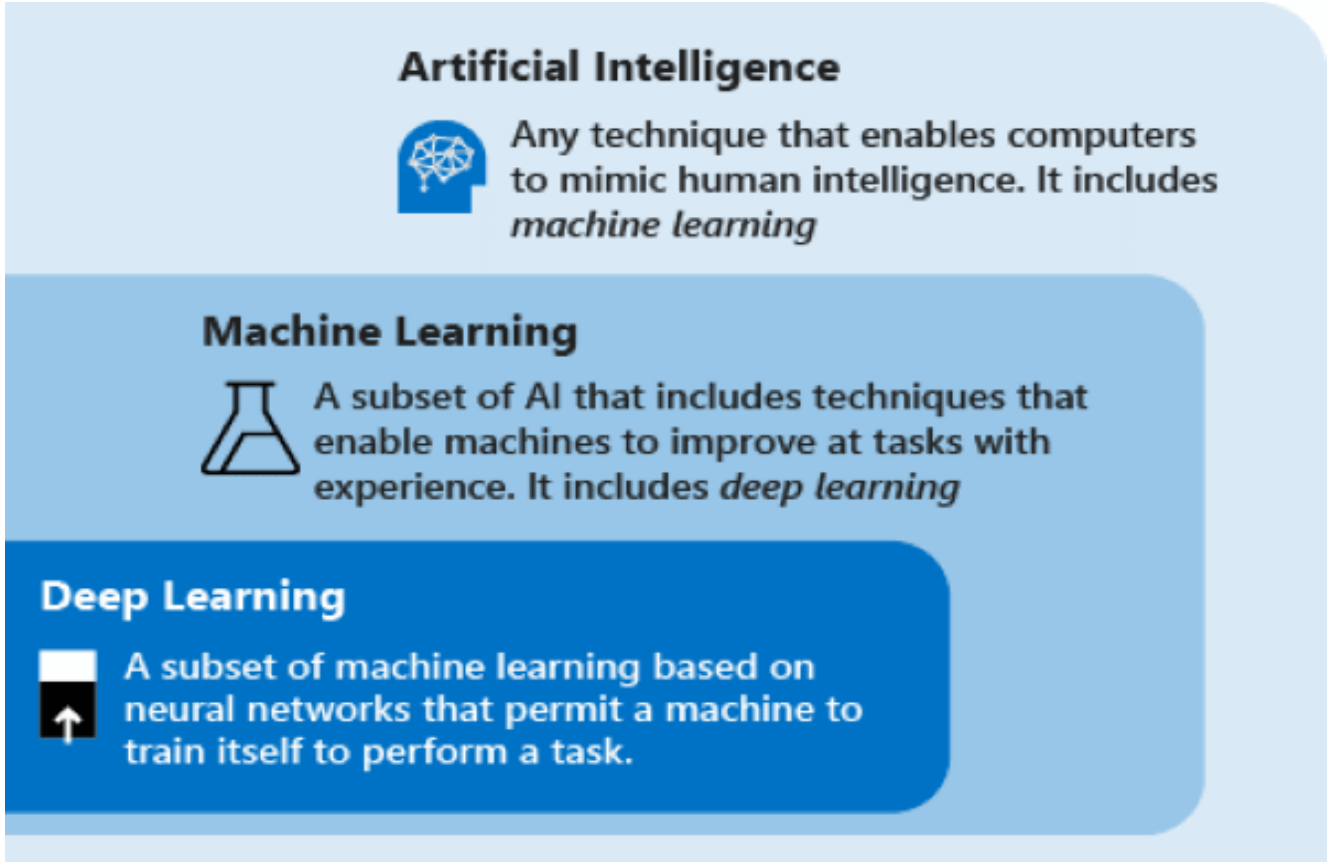


AI Subdomains



https://static.javatpoint.com/tutorial/ai/images/subsets-of-ai.png

AI vs ML vs DL



https://docs.microsoft.com/en-us/azure/architecture/data-guide/big-data/ai-overview

Difference between AI and ML

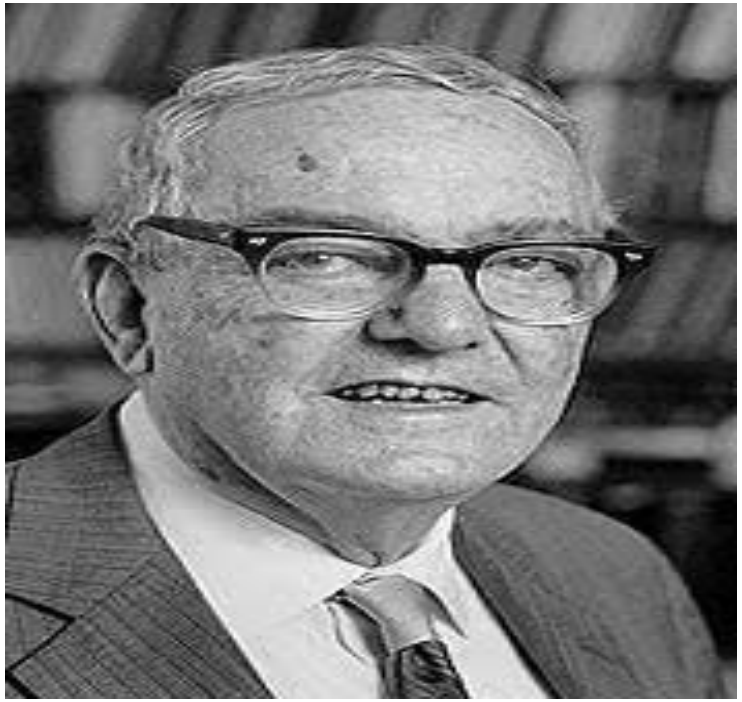
ARTIFICIAL INTELLIGENCE	MACHINE LEARNING
AI stands for Artificial intelligence, where intelligence is defined as acquisition of knowledge intelligence is defined as an ability to acquire and apply knowledge.	ML stands for Machine Learning which is defined as the acquisition of knowledge or skill
The aim is to increase chance of success and not accuracy.	The aim is to increase accuracy, but it does not care about success
It works as a computer program that does smart work.	It is a simple concept machine takes data and learn from data.
The goal is to simulate natural intelligence to solve complex problem.	The goal is to learn from data on certain task to maximize the performance of machine on this task.
AI is decision making.	ML allows system to learn new things from data.

Machine Learning

Herbert Alexander Simon:

"Learning is any process by which a system improves performance from experience."

"Machine Learning is concerned with computer programs that automatically improve their performance through Herbert Simon experience."



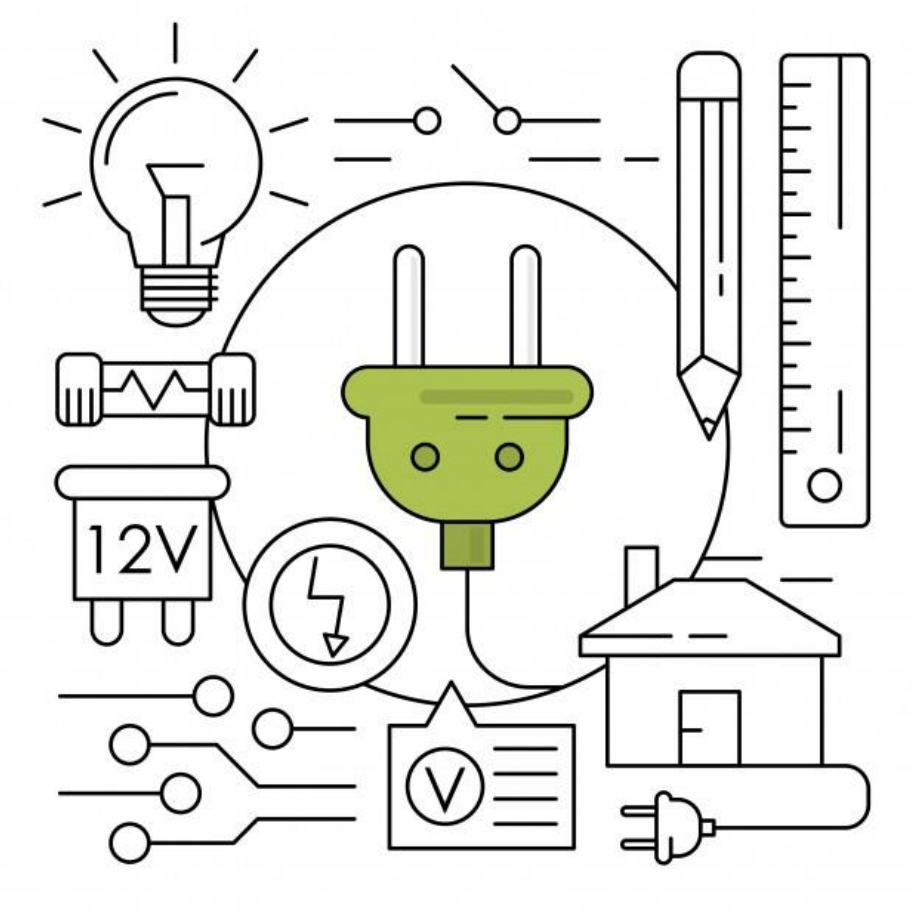
Turing Award 1975
Nobel Prize in Economics 1978

Pipeline of Machine Learning

https://www.xenonstack.com/blog/machine-learning-pipeline/

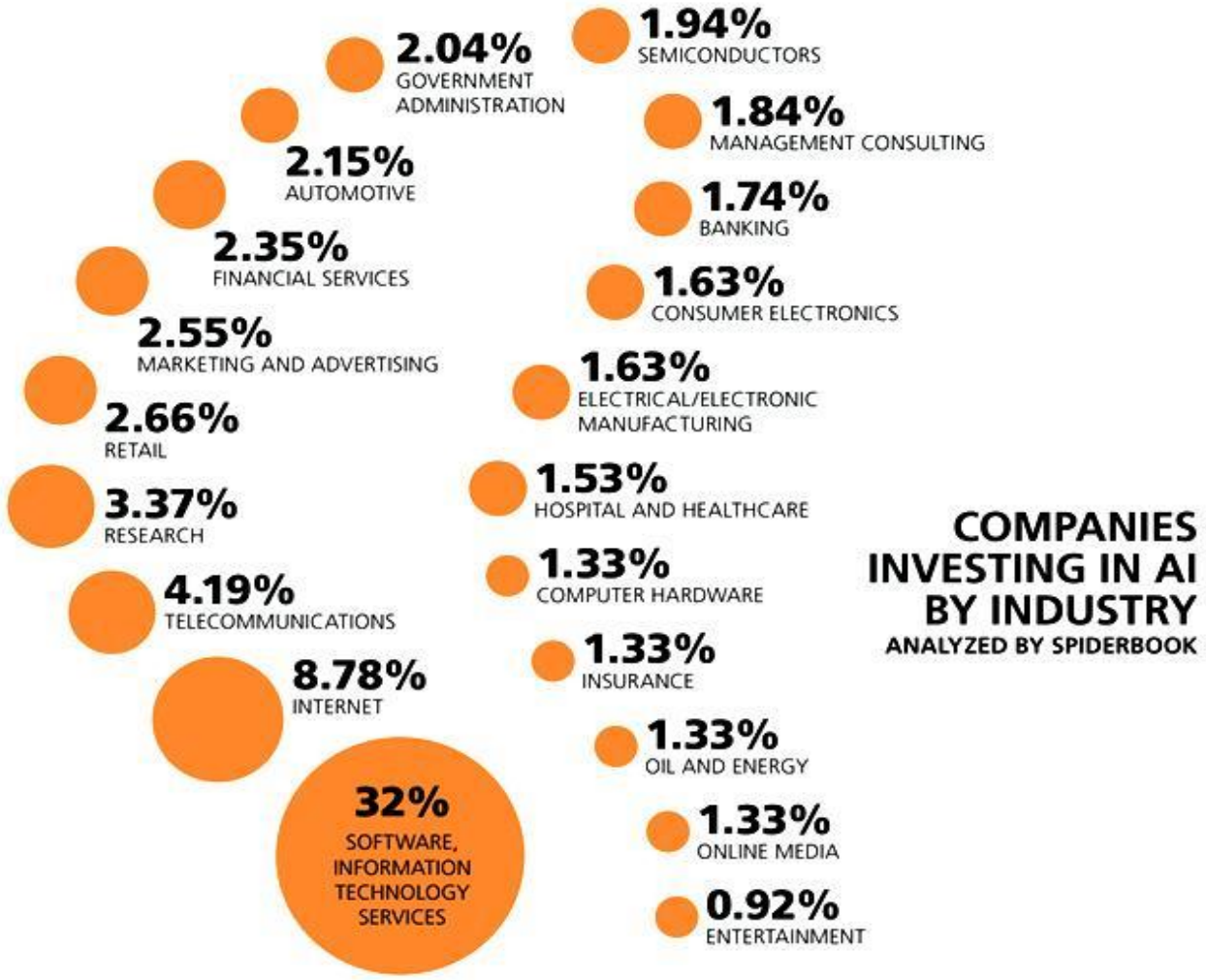
Market opportunities and career in AI

- **AI Is The New Electricity**



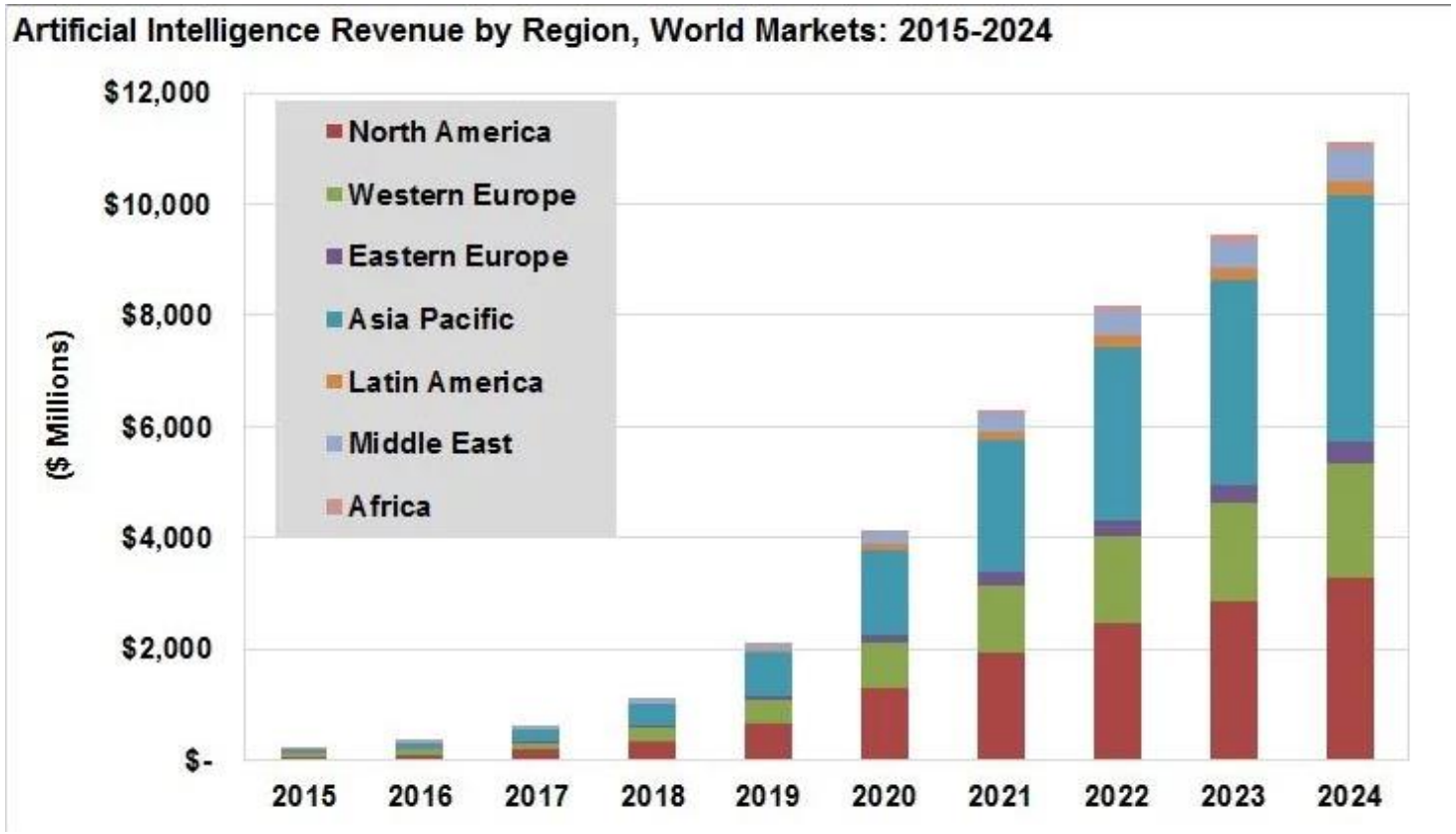
Market opportunities and career in AI

- Current data visualization of companies investing in Artificial Intelligence



Source - http://www.oreilly.com/data/free/the-new-artificial-intelligence-market.csp

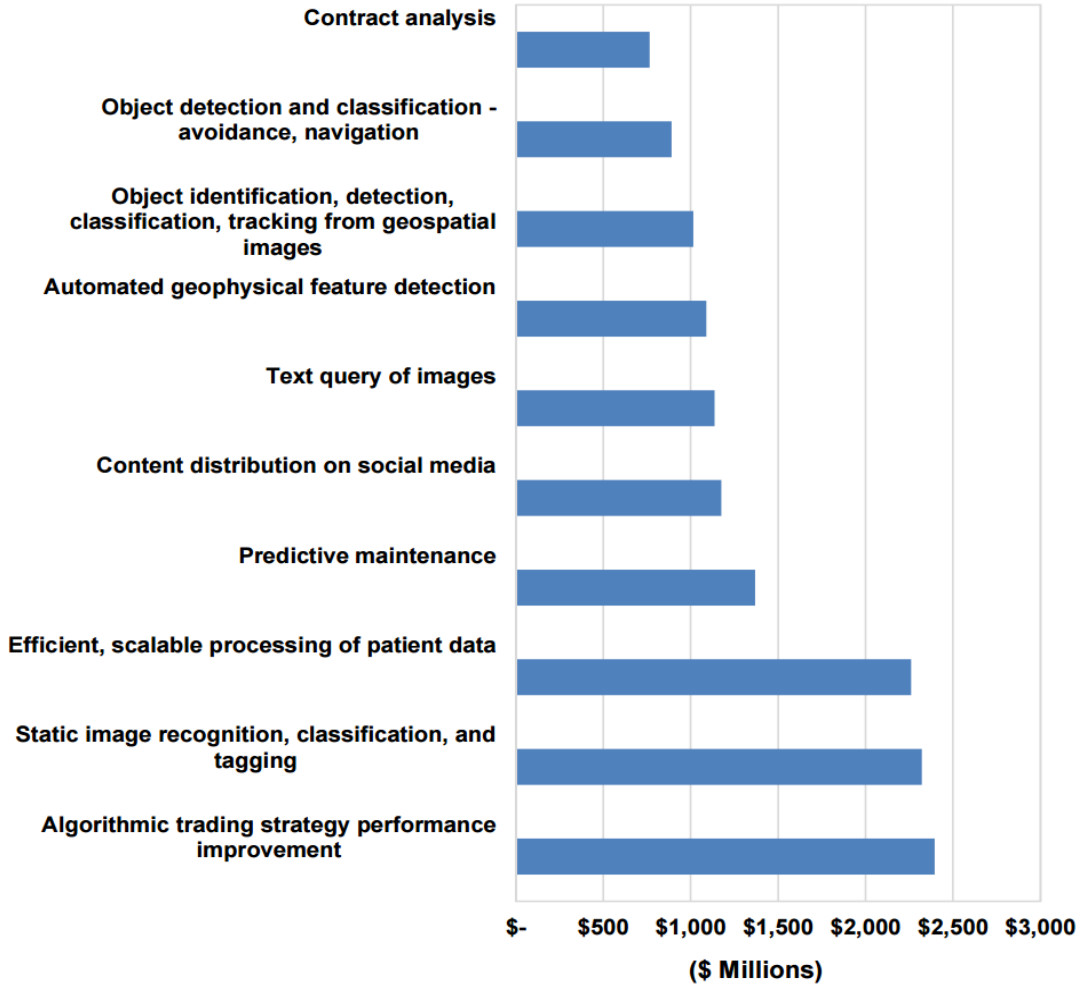
Market opportunities and career in AI



Source - https://www.tractica.com/newsroom/press-releases/artificial-intelligence-for-enterprise-applications-to-reach-11-1-billion-in-market-value-by-2024/

Market opportunities and career in AI

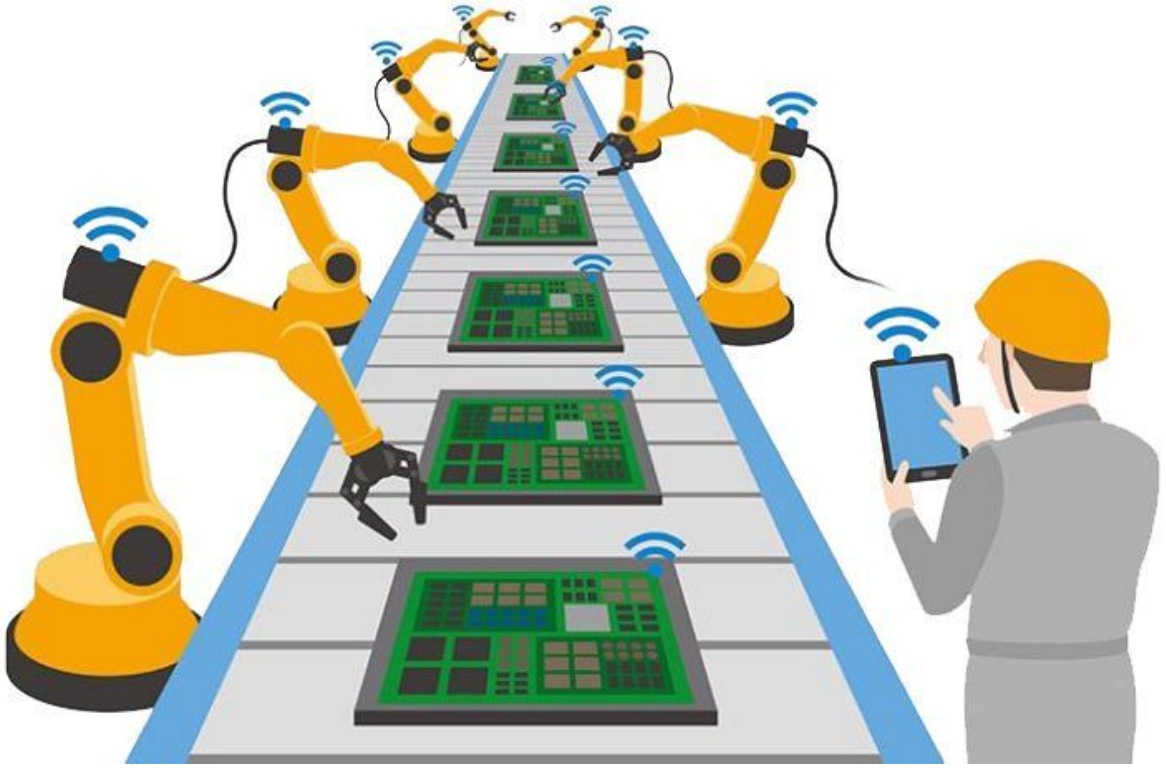
- Artificial Intelligence Revenue, Top 10 Use Cases, World Markets: 2025



Source - https://www.tractica.com/wp-content/uploads/2016/08/MD-AIMF-3Q16-Executive-Summary.pdf

Market opportunities and career in AI

- It's estimated that by 2025, the amount of work done by machines will jump from 29% to more than 50% - but that this rapid shift will be accompanied by new labour-market demands that may result in more, rather than fewer, jobs".
  - The Future of Jobs Report 2018 by World Economic Forum



Market opportunities and career in AI

- Jobs with future skills such as AI are on the rise.
- A number of highly “automatable” jobs fall into the top 10 most declining occupations.

Source - https://www.weforum.org/agenda/2018/09/artificial-intelligence-shaking-up-job-market/

Market opportunities and career in AI

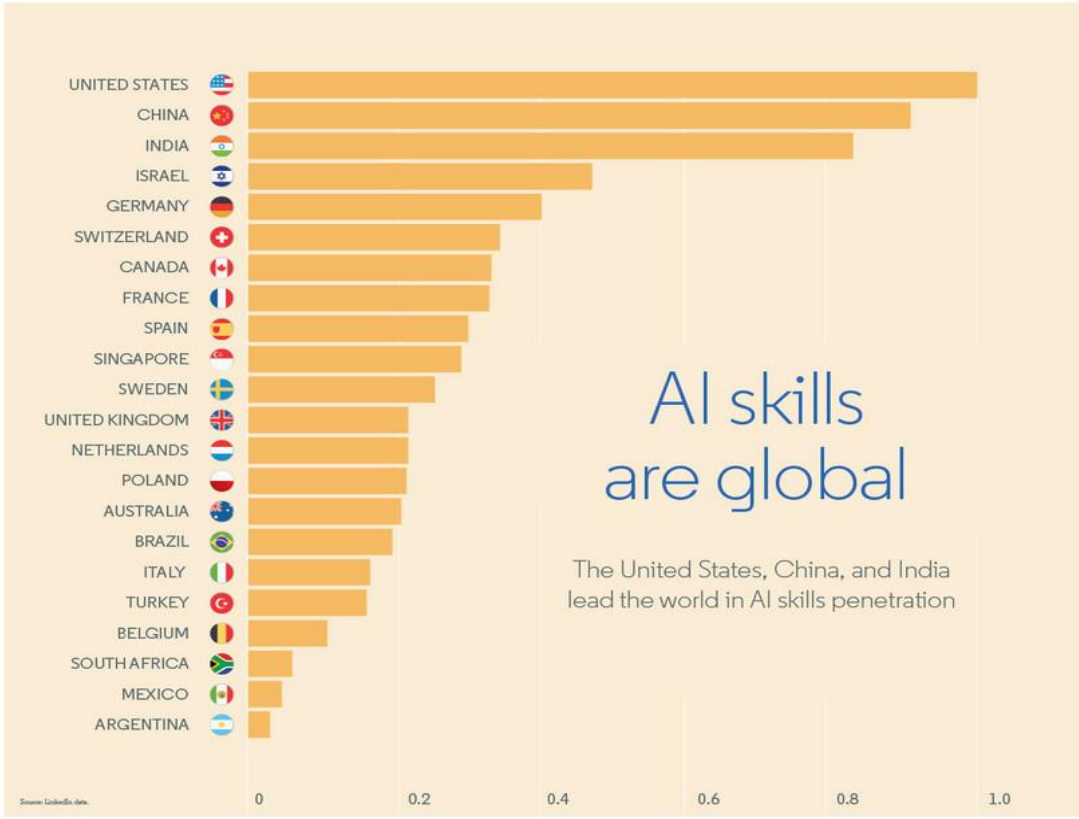
- AI skills are among the fastest-growing skills on LinkedIn.
- The proportion of core skills required to perform a job that will remain the same will be about 58% over the 2018–2022 period.

Trending, 2022	Declining, 2022
Analytical thinking and innovation	Manual dexterity, endurance and precision
Active learning and learning strategies	Memory, verbal, auditory and spatial abilities
Creativity, originality and initiative	Management of financial, material resources
Technology design and programming	Technology installation and maintenance
Critical thinking and analysis	Reading, writing, math and active listening
Complex problem-solving	Management of personnel
Leadership and social influence	Quality control and safety awareness
Emotional intelligence	Coordination and time management
Reasoning, problem-solving and ideation	Visual, auditory and speech abilities
Systems analysis and evaluation	Technology use, monitoring and control

Source - Future of Jobs 2018, World Economic Forum

Market opportunities and career in AI

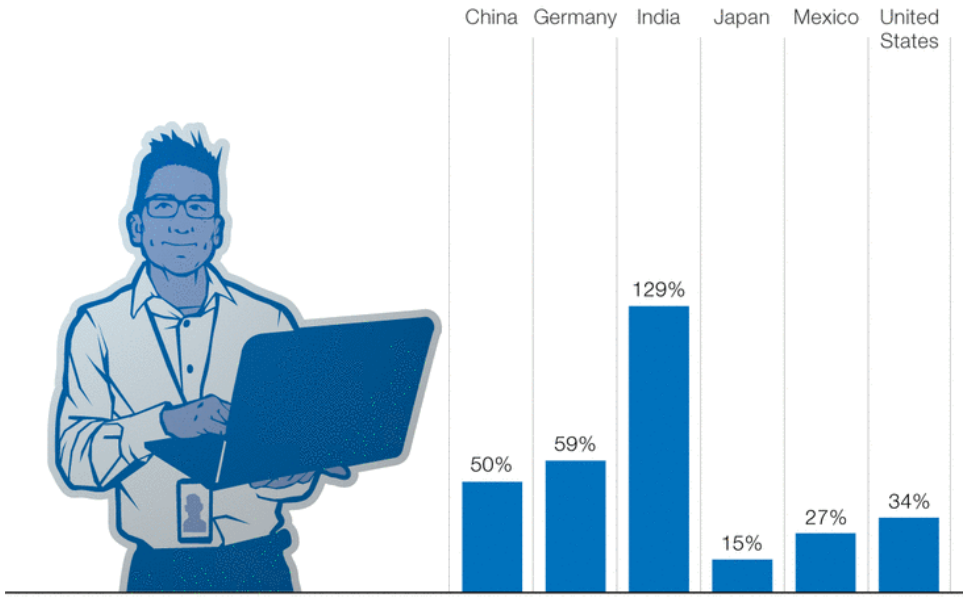
- Future skills are global, and the countries with the highest penetration of such skills are the United States, China, **India**, Israel and Germany.



Source - https://www.weforum.org/agenda/2018/09/artificial-intelligence-shaking-up-job-market/

Market opportunities and career in AI

- Employment growth and decline by occupation till 2030, brought on by automation through AI, in various disciplines:
  - Care providers - 242%
  - Teachers - 208%
  - Technology professionals -129%
  - Builders - 117%
  - Customer interaction - 46%
  - Office support - 21%
  - Predictable physical work - 15%
  - Unpredictable physical work - 9%



Source - US Bureau of Labor Statistics; McKinsey Global Institute analysis
https://www.mckinsey.com/featured-insights/future-of-work/how-will-automation-affect-jobs-skills-and-wages

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THANK YOU