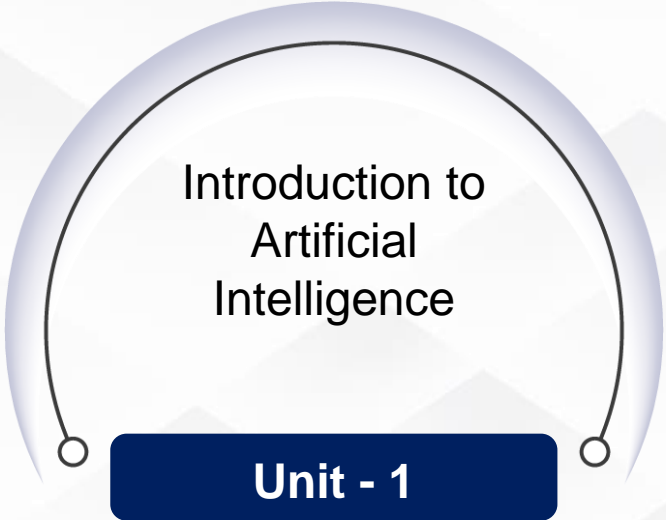


Module - 3

# Foundation course



## Units for Discussion

A diagram for Unit 1 featuring a light blue semi-circular arc with a black outline. Inside the arc, the text 'Introduction to Artificial Intelligence' is centered. Below the arc, a dark blue rectangular box contains the text 'Unit - 1'.

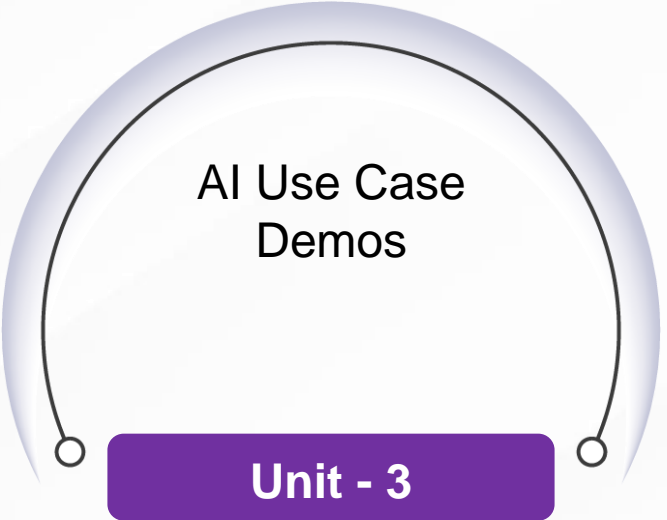
Introduction to  
Artificial  
Intelligence

**Unit - 1**

A diagram for Unit 2 featuring a light red semi-circular arc with a black outline. Inside the arc, the text 'Artificial Intelligent in Different Domain' is centered. Below the arc, a dark red rectangular box contains the text 'Unit - 2'.

Artificial  
Intelligent in  
Different Domain

**Unit - 2**

A diagram for Unit 3 featuring a light purple semi-circular arc with a black outline. Inside the arc, the text 'AI Use Case Demos' is centered. Below the arc, a dark purple rectangular box contains the text 'Unit - 3'.

AI Use Case  
Demos

**Unit - 3**

Unit - 2

# **Artificial Intelligent in Different Domain**

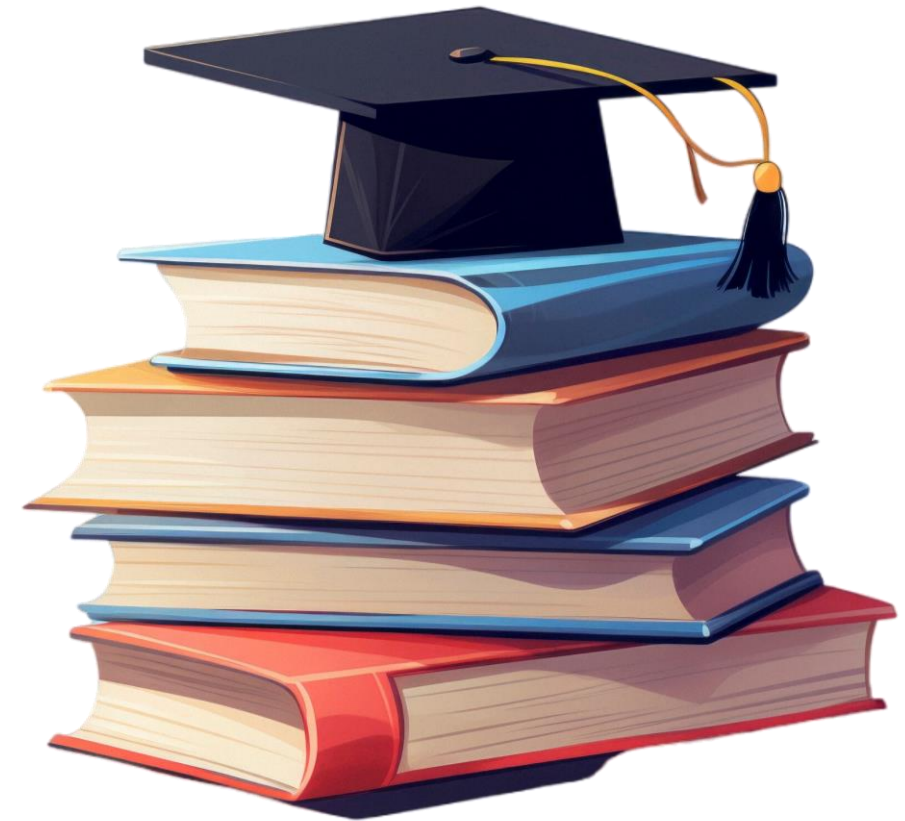


# DISCLAIMER

The content is curated from online/offline resources and used for educational purpose only.

## Learning Objectives

- Exploring AI with Fun
- The AI Game
- Experiencing AI
- AI in Real Life
- Real Life AI Projects
- Real life ML Projects - CLEANING ROBOTS
- AI in Health Care
- The AI Computer Vision
- AI Project- Self Driven Cars
- Market opportunities and career in AI
- Roadmap for AI development



Source :

## AI Project- Self Driven Cars



## **Activity 1 Exploring AI with Quick Draw**

## Exploring AI with Fun

### The AI Game



[Quick Draw](#)





## **Activity 2 The AI Game Semantris**

## Exploring AI with Fun

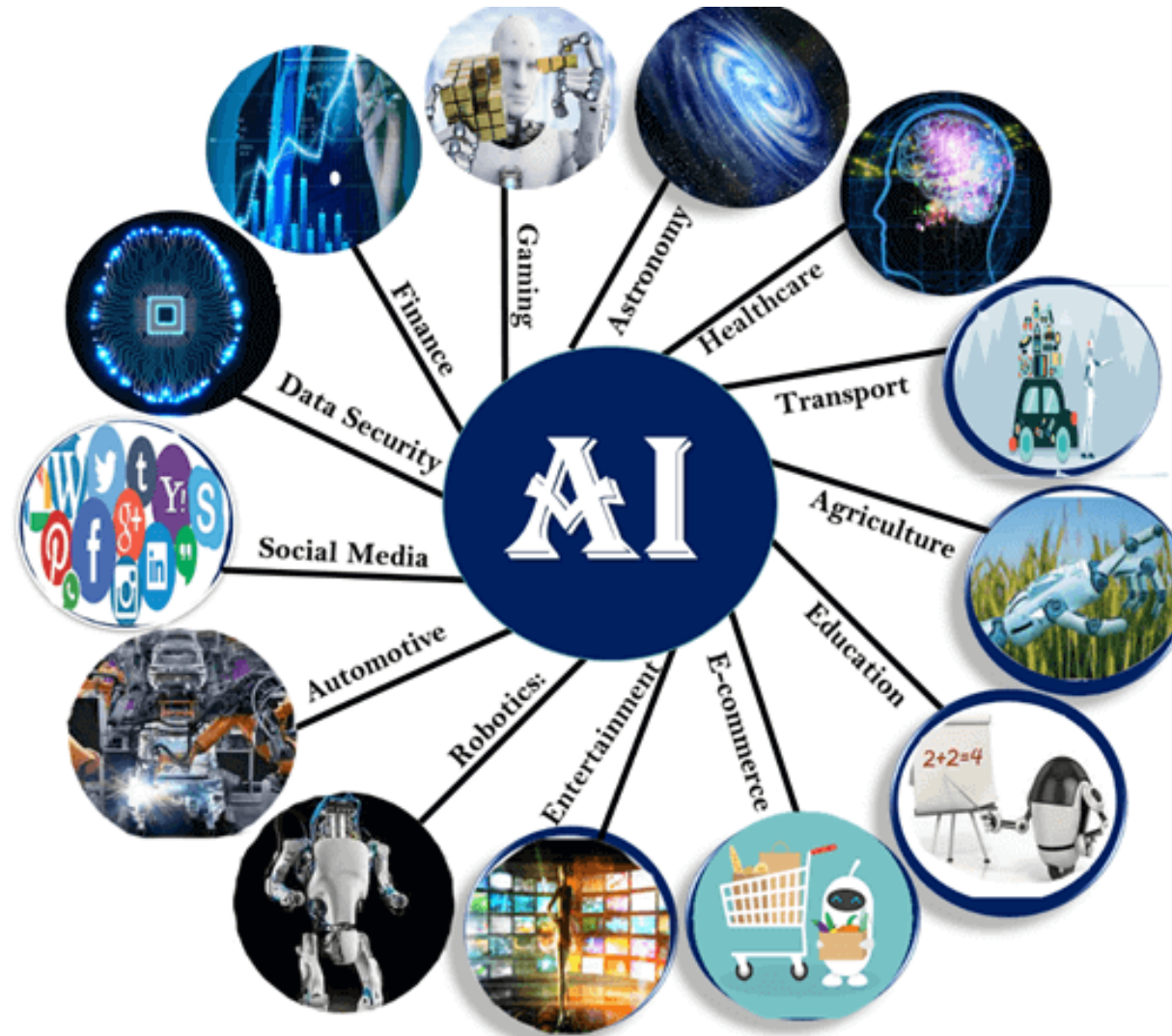
### The AI Game



[Semantris](#)



## Experiencing AI



## Real life AI Projects

An intelligent virtual assistant (IVA) or intelligent personal assistant (IPA) is a software agent that can perform tasks or services for an individual based on commands or questions.

Cortana was demonstrated for the first time at the Microsoft BUILD Developer Conference in San Francisco in April 2014.



## Real life ML Projects - Cleaning ROBOTS

- A robotic vacuum cleaner, often called a Roomba as a generic trademark, is an autonomous robotic vacuum cleaner which has intelligent programming and a limited vacuum floor cleaning system.
- In 2002 iRobot launches the Roomba floor vacuuming robot.



## Real life ML Projects - Cleaning ROBOTS





## AI in Health Care

A close-up photograph of a person's face, focusing on the eyes and nose. The person has light skin with visible freckles and brown eyes. The text "AI FOR GOOD" is overlaid in white, bold, sans-serif capital letters across the center of the face. The image is framed by black bars at the top and bottom.

**AI** FOR GOOD

## The AI Computer Vision

- Computer Vision is a field of AI, that includes methods for acquiring, processing, analyzing, and understanding images.
- It duplicates the abilities of human vision, by training machines to tell objects apart, how far away they are, or whether they are moving.
- Computer Vision includes within itself Image Feature Extraction, Image Captioning, Image Recognition, Image Classification, and Image Processing etc.



Source: <https://github.com/Awesome-Machine-Learning/Computer-Vision>

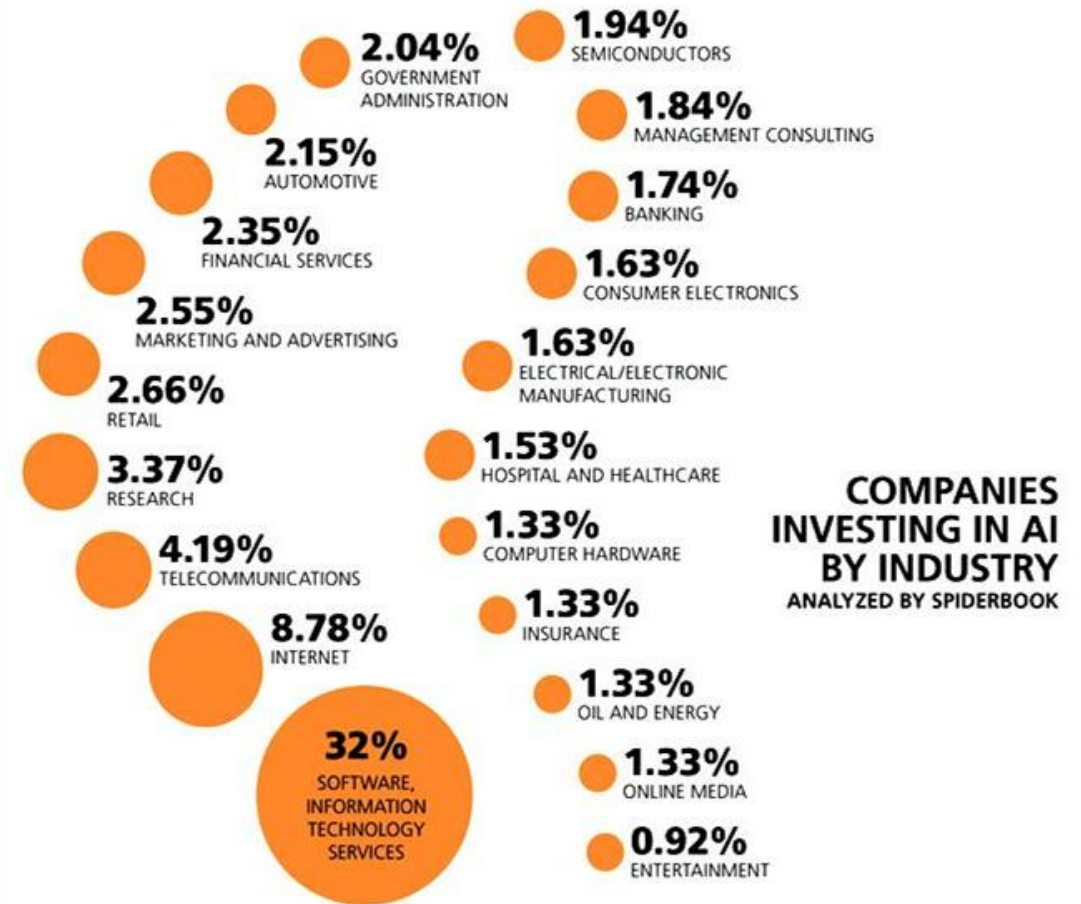


# AI in Autonomous Systems



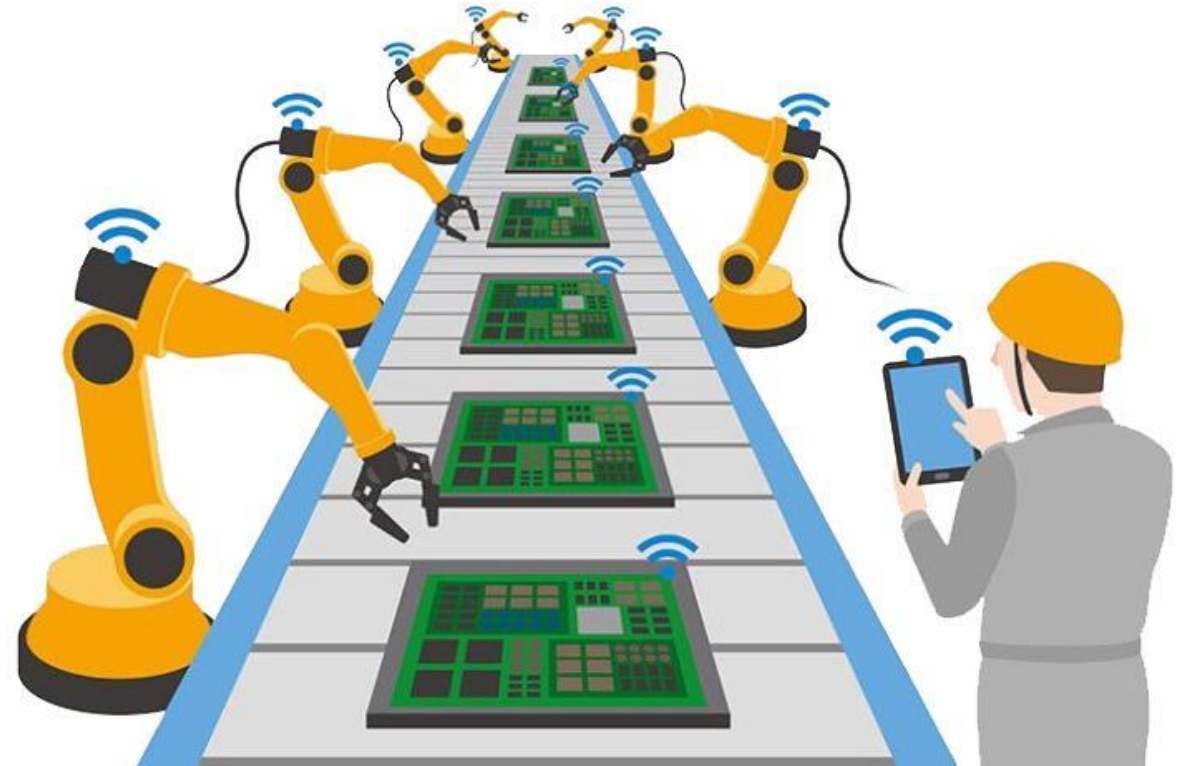
## Market Opportunities and Career in AI

- Current data visualization of companies investing in Artificial Intelligence.



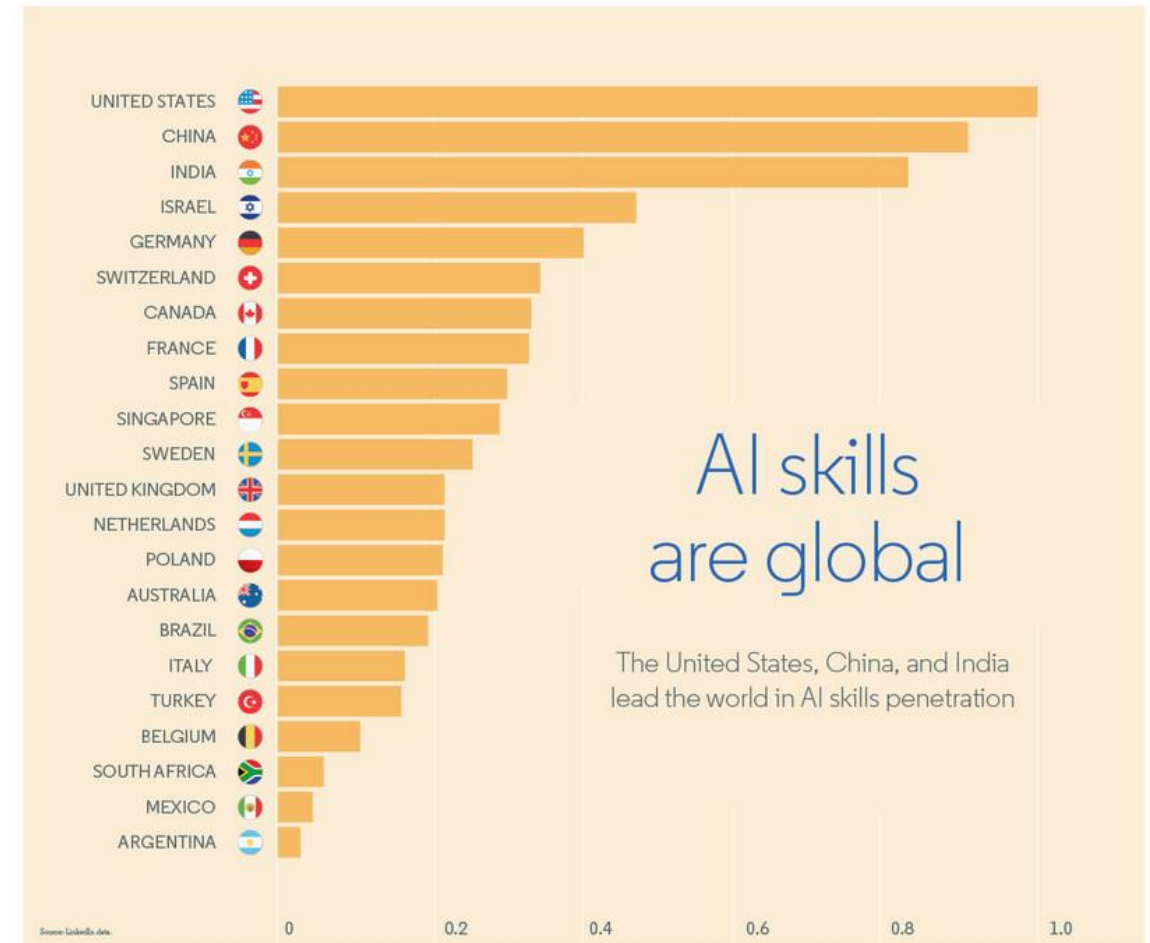
## Market Opportunities and Career in AI

- 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

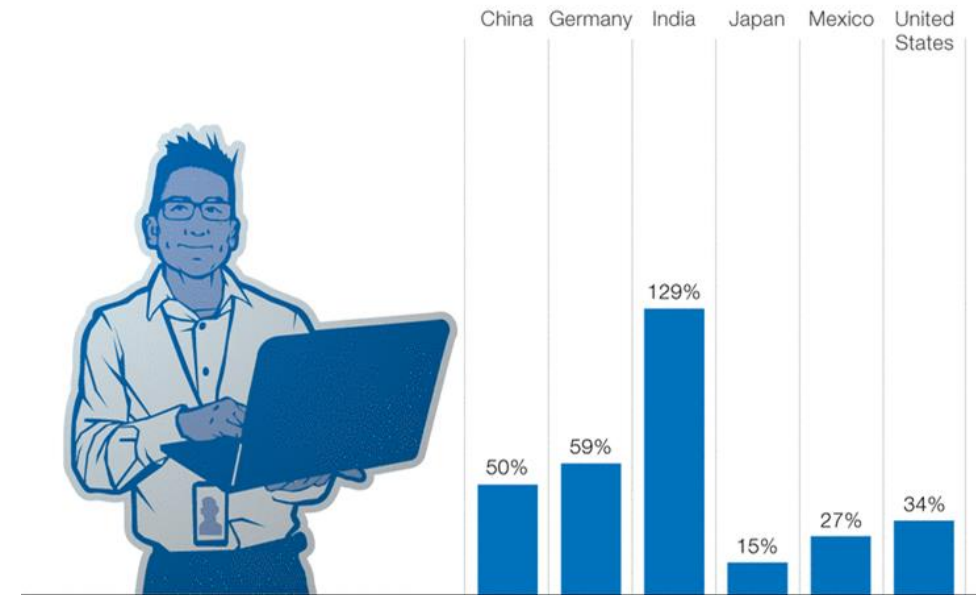
- Future skills are global, and the countries with the highest penetration of such skills are the United States, China, India, Israel and Germany.



## 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%

### US Bureau of Labor Statistics; McKinsey Global Institute analysis





## Job Landscape in AI

According to World Economic Forum, by 2025, new jobs will emerge, and others will be displaced by a shift in the division of labour between humans and machines.

### Growing job demand:

1. Data Analysts and Scientists
2. AI and Machine Learning Specialists
3. Big Data Specialists
4. Digital Marketing and Strategy Specialists
5. Process Automation Specialists
6. Business Development Professionals
7. Digital Transformation Specialists
8. Information Security Analysts
9. Software and Applications Developers
10. Internet of Things Specialists

### Decreasing job demand:

1. Data Entry Clerks
2. Administrative and Executive Secretaries
3. Accounting, Bookkeeping and Payroll Clerks
4. Accountants and Auditors
5. Assembly and Factory Workers
6. Business Services and Administration Managers
7. Client Information and Customer Service Workers
8. General and Operations Managers
9. Mechanics and Machinery Repairers
10. Material-Recording and Stock-Keeping Clerks

**Source:** Future of Jobs Report 2020, World Economic Forum.

# Roadmap for AI Development



Creating Mindset



Preparatory  
Groundwork



Acquiring skills

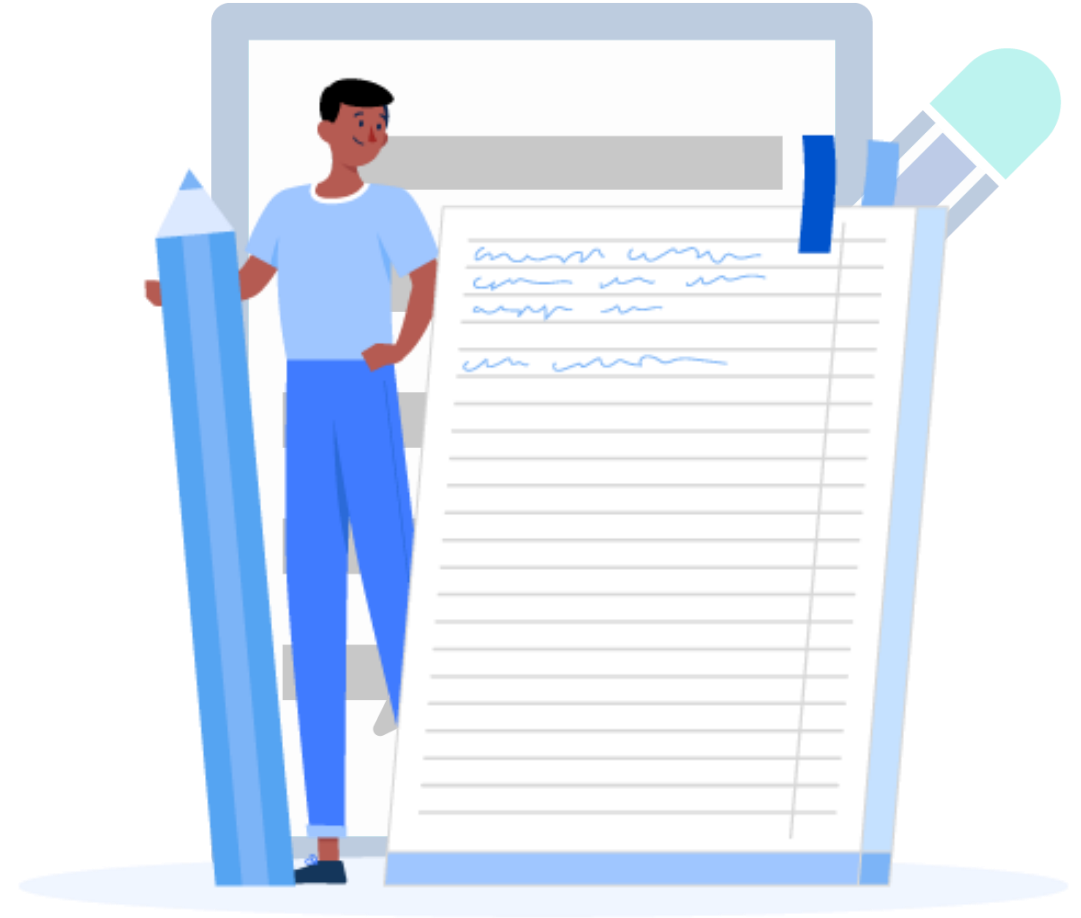


Developing and  
deploying applications

## Summary

We have completed this section and now we have understood about:

- Artificial Intelligence and it's applications in different domain
- AI & Computer Vision
- What are the market opportunities & career in AI
- And the Roadmap for AI Development



Source :



## References

- <https://quickdraw.withgoogle.com/>
- <https://research.google.com/semantis/>
- <https://www.javatpoint.com/application-of-ai>
- <https://www.weforum.org/agenda/2018/09/artificial-intelligence-shaking-up-job-market/>
- <https://www.oreilly.com/data/free/the-new-artificial-intelligence-market.csp>
- <https://www.mckinsey.com/featured-insights/future-of-work/how-will-automation-affect-jobs-skills-and-wages>



Let's Start

## Quiz

**1. In the field of healthcare, how can AI and machine learning be applied?**

- a) Diagnosing diseases from medical images
- b) Predicting stock market trends
- c) Controlling autonomous vehicles
- d) Writing poetry



**Answer: a) Diagnosing diseases from medical images**

## Quiz

**2. Which of the following is not a common application of computer vision?**

- a) Autonomous driving
- b) Sentiment analysis
- c) Facial recognition
- d) Object tracking



**Answer: b) Sentiment analysis**

## Quiz

**3. In which domain is AI commonly used for fraud detection and prevention?**

- a) Retail
- b) Agriculture
- c) Finance
- d) Education

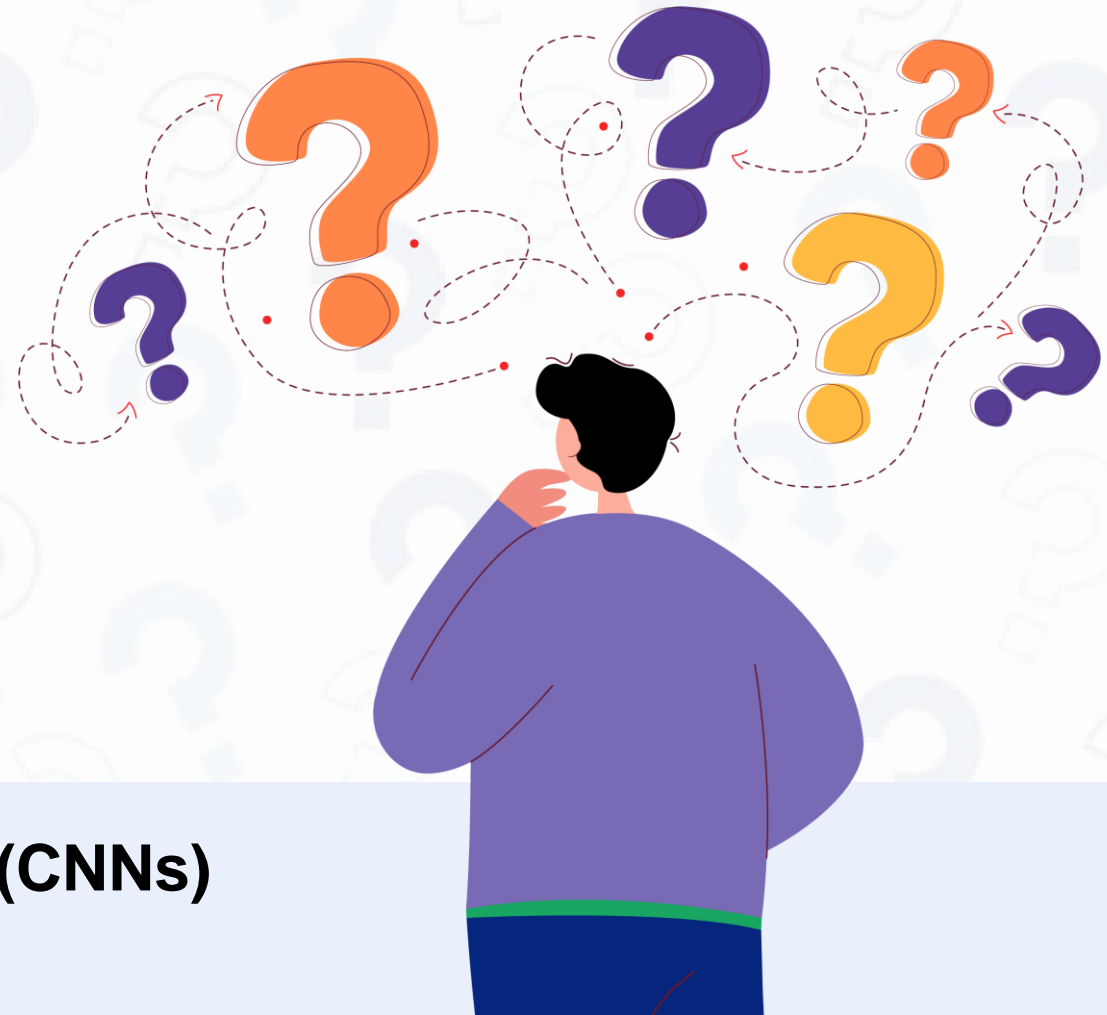


**Answer: c) Finance**

## Quiz

**4. Which machine learning algorithm is commonly used for image classification tasks in computer vision?**

- a) Decision Trees
- b) Naive Bayes
- c) Convolutional Neural Networks (CNNs)
- d) Linear Regression



**Answer: c) Convolutional Neural Networks (CNNs)**

## Quiz

**5. What is the primary application of AI in the field of autonomous robotics?**

- a) Predicting weather patterns
- b) Enhancing social media engagement
- c) Controlling and navigating robots in real-world environments
- d) Analyzing historical stock market data



**Answer: c) Controlling and navigating robots in real-world environments**

# Thank You