

An Introduction to Machine Learning

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Objectives

By the end of this lecture...

Students will have a basic understanding of

- what is machine learning
- why we need machine learning
- where machine learning is used in daily life

What is Machine Learning?

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Machine learning enables computers to...

- 1 self-learn from training data

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- 2 detect patterns from data for learning

<https://monkeylearn.com/machine-learning/>

What is Machine Learning?

Machine learning enables computers to...

- 1 self-learn from training data
- 2 detect patterns from data for learning
- 3 learn from experience without human interference

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Why Machine Learning?

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- 1 Automate tasks

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- 2 Adapt to new data

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- 4 Works on large data sets

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- 2 Adapt to new data
- 3 Reduced human input
- 4 Works on large data sets
- 5 Can be faster

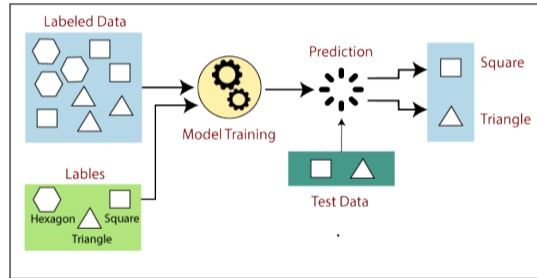
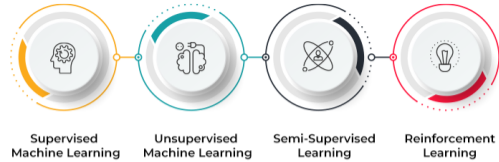
Why Machine Learning?

- 1 Automate tasks
- 2 Adapt to new data
- 3 Reduced human input
- 4 Works on large data sets
- 5 Can be faster
- 6 Can be more accurate (if trained properly)

Types of Machine learning Models

Types of Machine Learning

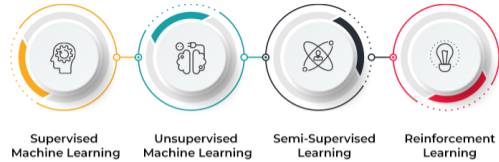
1 Supervised



<https://www.javatpoint.com/supervised-machine-learning>

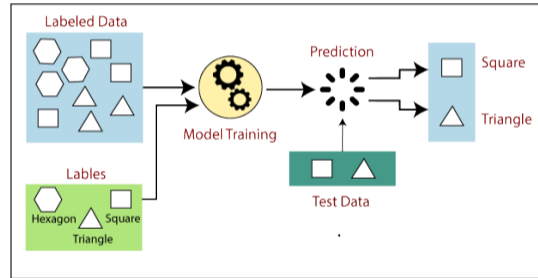
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Types of Machine Learning



1 Supervised

- spam emails, sentiment analysis

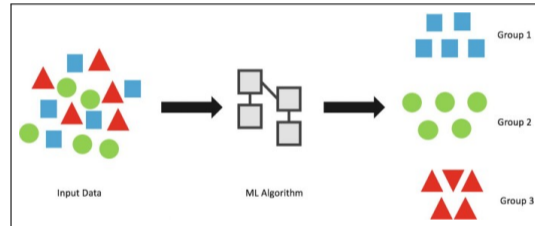
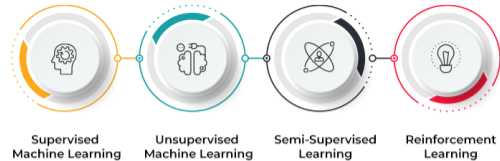


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Types of Machine Learning

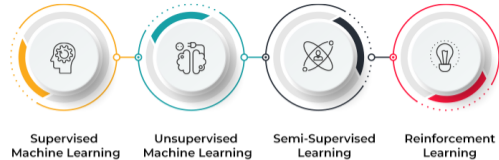
- 1 Supervised
 - spam emails, sentiment analysis
- 2 Unsupervised



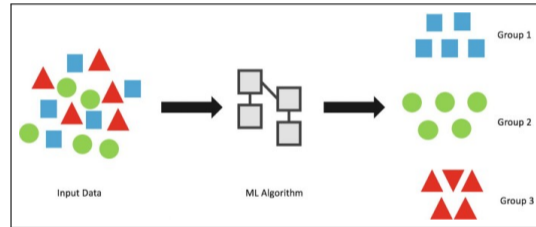
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Types of Machine Learning



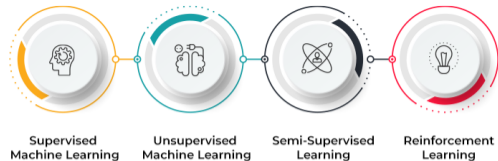
- 1 Supervised
 - spam emails, sentiment analysis
- 2 Unsupervised
 - clustering, dimensionality reduction



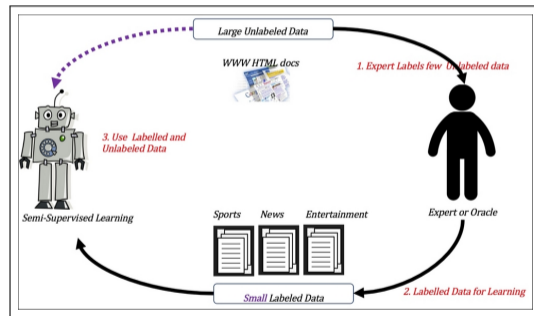
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Types of Machine Learning



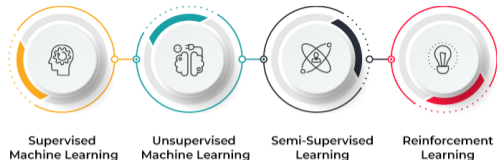
- 1 Supervised
 - spam emails, sentiment analysis
- 2 Unsupervised
 - clustering, dimensionality reduction
- 3 Semi-supervised



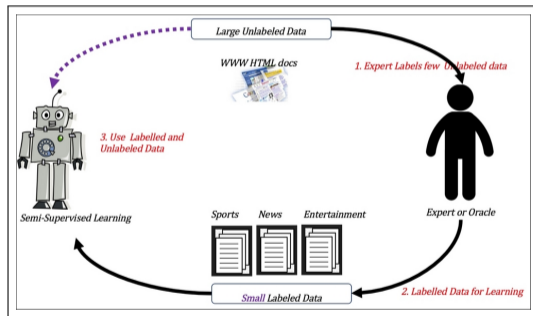
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Types of Machine Learning



- 1 Supervised
 - spam emails, sentiment analysis
- 2 Unsupervised
 - clustering, dimensionality reduction
- 3 Semi-supervised
 - image classification

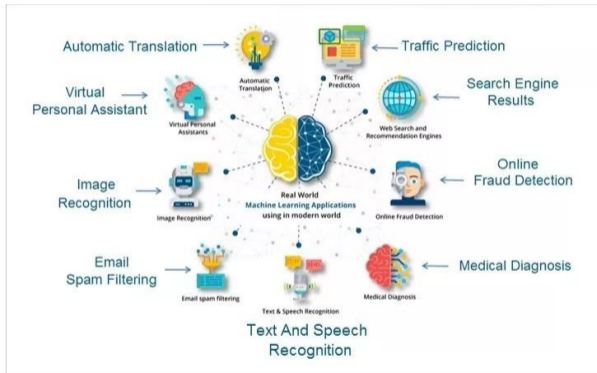


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Applications

Real-World ML Applications



<https://www.aiottalk.com/wp-content/webp-express/webp-images/doc-root/wp-content/uploads/2021/12/Real-World-Applications-Of-Machine-Learning.jpg.webp>

Conclusion

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- 1 We discussed what is machine learning

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- 2 We discussed why machine learning is needed

Conclusion

- 1 We discussed what is machine learning
- 2 We discussed why machine learning is needed
- 3 We looked at some scenarios from our day-to-day life where ML is used

Thank You