



Machine Learning for Data Science WQD7006

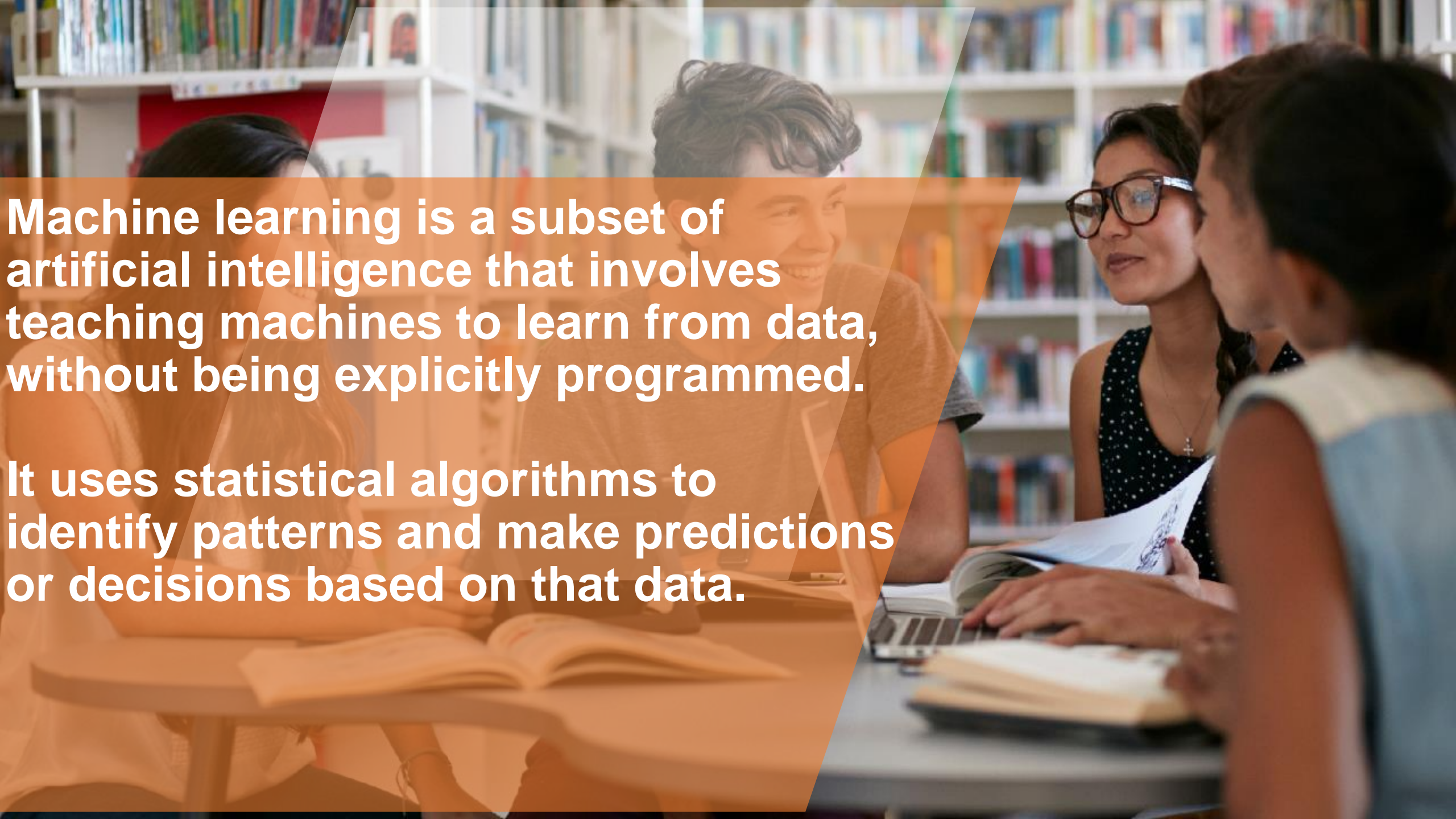


Introduction and
Overview

Challenges of Machine Learning



- Lack of labeled data for supervised learning
- Imbalanced data classes
- Feature selection and engineering
- Scalability and computational complexity
- Choosing the right algorithm for the task
- Interpretability and explainability
- Ethical considerations and bias

A background image showing a group of students in a library or study hall. They are sitting at a table, looking at books and a laptop. The scene is overlaid with a semi-transparent orange shape that contains the text.

Machine learning is a subset of artificial intelligence that involves teaching machines to learn from data, without being explicitly programmed.

It uses statistical algorithms to identify patterns and make predictions or decisions based on that data.

The Importance of data analysis for every business

- Problem Solving,
- Better Targeting,
- Cost Cutting,
- Obtain Accurate Data,
- New Innovations.

Source: <https://businesspartnermagazine.com/5-reasons-why-data-analysis-is-important-for-every-business/>



Learning outcomes

At the end of this module, YOU should be able to:

- Explain the concepts and techniques for machine learning.
- Identify appropriate machine learning techniques for various datasets.
- Evaluate practical solutions to common problems in machine learning.

MODULE CONTENTS



**Introduction
to Machine
Learning**



**Tools for
machine
learning**



**Data
Preprocessing**



**Regression
and Logistic
Regression**



Module Contents



Clustering -I



Naive Bayes



**Neural
Network**



Decision Tree



MODULE CONTENTS



**Support
Vector
Machine**



**Random
Forest**



**Neural
Networks -
Deep
Learning-
CNN**



**Trending
Topics in ML**



Assessment

Assessment	Deadline
Continuous assessment (50%)	
- Quiz – 10 %	Week 6
- Mid Term – 15 %	Week 09
- Project Report & Presentation – 25 %	Week 12
Final Exam (50%):	Alternative Assessment. - TBC
	Individual Assignment – 30 % Group Assignment – 20 %



- **Contact**

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- I don't check my Microsoft 365 email inbox. I ONLY use Microsoft 365 email for TEAMS communication & class.