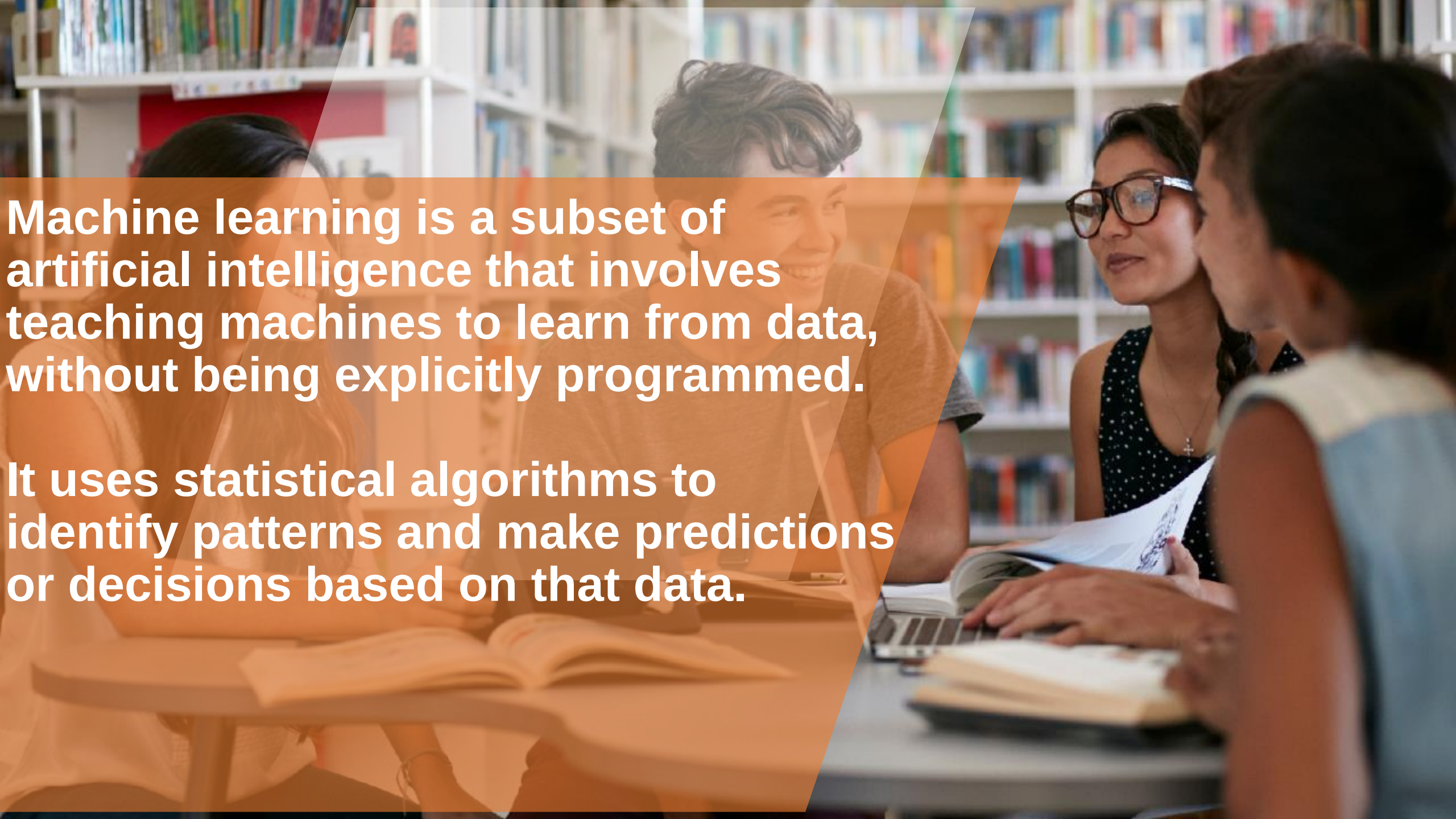
Machine Learning for Data Science WQD7006

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



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

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

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

Clustering - II

Trending Topics in ML

Assessment

Assessment	Deadline
Continuous assessment (50%) - **Quiz – 10 %** - **Mid Term – 15 %** **- Project Report & Presentation – 25 %**	TBC
Final Exam (50%):	Exam Week Methods - TBC