

Welcome to episode 7 of the AI Practitioner Exam Bites!

Let's start by looking at the review question from the last episode, asking us to identify the most appropriate learning approach and ML technique for this task.

The correct answer is **C) Supervised learning with classification** - as supervised learning is appropriate as we have a dataset of posts with known topic labels, and classification is the right technique for categorizing data into predefined classes or topics.

The others are incorrect as unsupervised learning doesn't use labeled data, clustering discovers groups in data without predefined categories (which isn't the goal here), and regression is for predicting continuous numerical values (not categorizing into topics).

Today we are going to cover the exam objective: *identify examples of real-world AI applications (for example, computer vision, NLP, speech recognition, recommendation systems, fraud detection, forecasting).*

AI is all around us, powering many of the technologies we use daily. Let's break down some key examples:

Computer Vision: This is AI that can "see" and interpret visual information. Have you seen on your smartphone that in the Photos app it can identify faces and show you all the photos with a particular person? Or perhaps the ability of your car to identify road signs and obstacles?

Natural Language Processing (NLP): This enables machines to understand, interpret, and generate human language. It's the magic behind chatbots, voice assistants like Alexa, and language translation services.

Speech Recognition: Closely related to Natural Language Processing, this technology converts spoken words into text. It's used in voice-to-text applications, voice commands, and transcription services.

Recommendation Systems: Ever wonder how Netflix suggests shows you might like? Or Amazon.com shows you other products you might be interested in buying? That's AI in action! These systems analyze your behavior and preferences to recommend products, content, or services.

Fraud Detection: AI helps financial institutions spot suspicious activities by analyzing patterns in transactions. It's a crucial tool in cybersecurity and financial crime prevention - like when an unusual transaction is detected on your credit card and you get a text message asking you to confirm whether the transaction is legitimate or not.

Forecasting: AI excels at predicting future trends based on historical data. This is used in weather forecasting, stock market predictions, and demand forecasting in retail.

A company wants to implement an AI system that can automatically categorize and respond to customer emails based on their content. Which type of AI application is most suitable for this task?

- A) *Fraud Detection*
- B) *Computer Vision*
- C) *Speech Recognition*
- D) *Natural Language Processing (NLP)***

See you in the next episode where we are going to finish off this section of work by looking at some AWS AI/ML services!