WEEK OVERVIEW

This week, we are exploring Fine-Tuning Large Language Models (LLMs). We'll start by understanding what fine-tuning means, why it's needed, and then compare different strategies ranging from full fine-tuning to parameter-efficient methods.

A major focus will be on Parameter-Efficient Fine Tuning (PEFT) approaches, which allow significant improvements in model performance while modifying only a small portion of the model's parameters, making the process faster, cheaper, and more scalable.

The following topics will be covered in this module:

- Introduction & Need for Fine-Tuning
- Common Fine-Tuning Strategies
- Parameter-Efficient Fine-Tuning (PEFT) Techniques
- Scalability of PEFT
- Comparison of Fine-Tuning Approaches

LEARNING OBJECTIVES

By the end of this module, you will be able to:

- Define fine-tuning and explain its role in improving LLM performance.
- Describe the need for fine-tuning in adapting LLMs to specific tasks or domains.
- Compare full fine-tuning with parameter-efficient approaches in terms of cost, scalability, and performance.
- Explain the principles and applications of various PEFT techniques, including Prompt Tuning, Prefix Tuning, Adapter Layers, LoRA, and QLoRA.

LEARNING INSTRUMENTS

Week	Week Name	No. of Videos	Total Duration	No. of Test Your Understanding Quizzes	No. of Graded Quizzes	No. of Practice Assignments
1	Fine Tuning LLMs	11	~1.5 hours	10	1	1