



# Fine-Tuning LLMs

## Learning Outcomes

By the end of this workshop you will:

1. Learn how prompt engineering and fine-tuning should be used together to optimize the output of large pre-trained models
2. Fine-tune a Large Language Model (LLM) using a data-centric approach
3. Deploy a Generative AI application to Hugging Face

## Project-Based Learning

During this course, *you will build, ship, and share your own end-to-end Generative AI application.*

## Detailed 1-Day Workshop Schedule

Module	Topics
Introduction and the Open Source Landscape	<b>Introduction</b> <ul style="list-style-type: none"><li>• Workshop Overview</li><li>• LLM Foundations</li><li>• The Open source Landscape</li><li>• Hugging Face Ecosystem (Datasets, Models, &amp; Spaces, etc.)</li></ul> <b>Fine-Tuning LLMs</b> <ul style="list-style-type: none"><li>• Data-Centric &amp; Synthetic Data Approaches for LLMs</li><li>• Design Patterns with LLMs</li><li>• LLM Evaluation and Benchmarks</li><li>• Prompt Engineering vs. Fine-Tuning</li></ul>
Hands-On Session 1	<b>Fine-Tuning Llama-3-8B</b>
Fine Tuning Best Practices and Deployment	<b>Deployment</b> <ul style="list-style-type: none"><li>• How to deploy your application to Hugging Face Spaces</li></ul> <b>Fine-Tuning Best Practices</b> <ul style="list-style-type: none"><li>• Hardware Requirements for Llama-3-8B</li></ul>



Hands-on Session 2	<b>Fine-Tuning LLMs for Legal Judgment</b>
Hands-on Session 3	<b>Collecting and Setting up Data for your own project</b>
Wrap up	<b>Next steps and resources</b>

### **About FourthBrain**

FourthBrain trains aspiring Machine Learning engineers in the technical and practical skills necessary to contribute immediately to an AI team. Our remote, online program is designed to be flexible and accessible for anyone with software experience. We infuse values of collaboration, communication, empathy, and equity throughout the program. We are part of the AI Fund, founded by Andrew Ng.