Department for Business and Trade & Supply Chain AI Lab

LLM Workshop Agenda

Software Requirements Any programming will be done on GitHub Workspaces, so only a GitHub account is required.

Practical Requirements Participants will be expected to have experience with Python. Knowledge of natural language processing and deep learning would be an advantage, but is not required.

Day 1: Thursday, 6 March 2025, West Hub, South Room

9:00 – 9:30	**Arrival**
9:30 – 10:30	**Introduction to the Workshop** **The challenges of working with LLMs** • How working with LLMs differs from conventional ML • Cloud vs on-prem vs direct from supplier • Open vs closed models
10:30 – 11:00	**Break**

11:00 – 12:30	**Introduction to LLMs**
	• Embeddings
	• Attention
	• The training data
	• Smaller models and tasks
	The OpenAI API
	• Why?
	• Getting started with the API
	  ○ Generation
	  ○ Vision
	  ○ Tools
	Prompt Engineering
	• Templating
	• Common strategies
	  ○ CoT
	  ○ Few-shot
	  ○ Best practices
	• Defensive prompts
	  ○ Reverse engineering
	  ○ Jailbreaking
	  ○ Prompt injection

12:30 – 13:30	**Lunch**
13:30 – 15:00	**Retrieval Augmented Generation** • The RAG pipeline

	• States
	• Vector Databases
	  ○ Options
	  ○ HNSW
	  ○ Semantic search
	• Data validation
	Evaluation
	• Evaluating raw output
	• Evaluating RAG components

15:00 – 15:30	**Break**

15:30 – 17:00	**Fine Tuning**
	• OpenAI models
	  ○ New knowledge
	  ○ Style transfer
	• Other models
	  ○ PEFT
	  ▪ LoRA
	  ▪ QLoRA
	  ○ Distributed training

Day 2: Friday, 7 March 2025, West Hub, West 2

9:00 – 9:30	**Arrival**
9:30 – 10:00	**Supply Chain AI Lab, Alexandra Brintrup**
10:00-11:00	**Supply chain Knowledge Graph Extraction with LLMs, Sara AlMahri**
11:00-11:30	**Break**
11:30 – 12:00	**Knowledge Graph Decentralised Query Making, Liming Xu**
12:00-13:00	**Supply Chain Link Prediction, Ge Zheng**
13:00 – 14:00	**Lunch**
14:00- 15:30	**Discussion and next steps**