COGNIT DX

AI Technical Training Proposal

Machine Learning, Deep Learning, Gen AI, Agentic Systems

For: DELL UAE

Proposal Version	*2.0*
Proposal Date	28.08.2025

I. EXECUTIVE SUMMARY

This proposal describes a comprehensive 14 days Training Program that aims to upskill your engineering and development team through a structured series of lessons, workshops and projects.

The program is designed to upskill Software Engineers, Data Scientists, Data Engineers and AI Engineers by providing foundational and advanced knowledge in **Machine Learning, Deep Learning, Gen AI** and **Agentic Systems** ensuring their ability to tackle real-world data projects effectively and augment their AI capabilities

The program assumes the following:
- The total number of participants is 15
- The team members' current capabilities range from beginner to intermediate.

II.   PROGRAM STRUCTURE

The Program will be delivered over 14 days. It consists of the following components:

1- PRE-EVALUATION (2 days)
2- TRAINING on site (10 days)
3- POST-EVALUATION (2 days)
    a. Supervised Capstone Group Project (1 day)
    b. Project Presentation (1 day)

It will be delivered by a **Lead Trainer from Cognit DX** who is a Senior Data Scientist with 2 decades experience in Machine Learning, Generative AI, Data Science and Data Engineering.

The Training part of the program will be delivered on site in Abu Dhabi over 10 days:
- Track 1: Monday to Friday: Machine Learning & Deep Learning
- Track 2: Monday to Friday: Gen AI, LLMs and Agentic Systems

Each day will have 6 hours of active learning including a small project.
Accounting for 1 hours lunch break + 2 x 15 minutes coffee breaks takes the overall duration to 7.5 hours per day.

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1- STEP1: PRE-EVALUATION

- To tailor the training effectively, we propose a **pre-evaluation assessment** to gauge the current skill levels of participants. This will include structured interviews and practical technical tests.
- The Lead Trainer will start with a series of **1-on-1 interviews** with the team members. He will ask them to show their GitHub repos and previous work.
- Then he will give them assessment **exercises** to test their Python and ML competency.
- The Pre-Evaluation will end with a **grade** that will be used as a base line to track students' progress and evolution at the end of the program.
- The Pre-Evaluation will also allow the trainer to tailor the training content, material, level and customized examples.

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2- STEP 2: TRAINING

WEEK 1: Machine Learning and Deep Learning		
Day 1	**Essential Foundation**	- Essential Prerequisite: Python Fundamentals - Application Architecture: UI Building, Git, and GitHub **Project: Building Apps with APIs in Python**
Day 2	**Machine Learning**	- Advanced Python: NumPy and Panda - Exploratory Data Analysis in Python - Statistical modeling techniques **Project: Building a basic ML model**
Day 3	**Advanced Machine Learning**	- Advanced machine learning algorithms - ML Platforms: (TensorFlow or PyTorch or or Keras) **Project: Building Predictive Analytics for Industrial Maintenance & Heavy Machinery**
Day 4	**Deep Learning**	- Deep learning fundamentals - Vision AI Models - Working with Hugging Face and Model Fine-Tuning **Project: AI for Object Detection and classification for heavy Machine**
Day 5	**MLOps**	- MLOps fundamentals - Model optimization and deployment strategies - Best Practices for monitoring and updating models **Project: Using MLOps tools to monitor and update models**

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WEEK 2: Generative AI, LLMs, Agentic Systems		
Day 6	**Gen AI 1**	- Intro to GenAI: What is Gen AI - Intro to LLM: How It Works Playground **Project: Generative AI Configuration & Different LLM**
Day 7	**Gen AI 2**	- Building LLM Wrappers, Function Calls, and Data Integration **Project**: **Building an Open-Source Project with Hugging Face**
Day 8	**RAG**	- Llama Index: Retrieval-Augmented Generation (RAG**)** - Intro to Vector Embedding and Vector Database - Advanced RAG **Project: Building a RAG Project with real customer data**
Day 9	**AI Agents**	- Intro to Chain of Thoughts and ReACT Prompting - Langchain Fundamentals **Project**: **Building LLM Apps with Langchain**
Day 10	**Agentic AI**	- Multi-Agent Systems - LangGraph Fundamentals - MCP: Model Context Protocol - A2A: Agent to Agent Communication **Project: Building Agentic AI System with LangGraph**

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3- STEP 3: POST-EVALUATION

To measure the effectiveness of the training, the Lead Trainer will conduct a post-evaluation at the end of the program:

The Post evaluation comprises the following activities:

- **1-hour Final exam:** This will be on site and supervised by the trainer. Practical tests to evaluate the ability to implement ML models and build scalable projects.

- **Capstone Final Projects:** Participants will be divided into groups and work on real-world **Final Projects**, applying the skills learned in use cases that will be chosen by the management to **reflect real use cases serving the business**. The Group projects will be around 4 hours, followed by a short presentation (15 mins each) and feedback from the trainer.

- **Retreat**: Groups will be given a week to work on growing, enhancing and optimizing the projects they worked on and incorporate the feedback given by the trainer

- **Final Presentation:** Groups will reconvene on site for a full day to deliver their Capstone Project Presentation. This will be with the attendance of the **Management** in addition to the trainer. Each group will get 30 mins each to present their enhanced project and listen to feedback from the trainer.

- **Final Evaluation:** Trainer will incorporate the following criteria to compute a final grade for each student:

  o Performance on the 10 small daily projects

  o Performance on the Capstone Final project

  o Final exam

- The above will allow the **Management** to compare the pre and post level of participants and measure the effectiveness of the program.

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DR. JASSIM AL AWADHI
Public Speaker
★★★★★

" Thank you Alaa It is fortunate that you are a member of the AI community in the UAE. The extent to which you are enthusiastic about disseminating AI knowledge is evident in your alignment with the UAE's leadership and vision. "

Masterclass Review

EMILIE WAHAB
Managing Director at L'Oreal Liban
★★★★★

" I was truly impressed by Alaa's AI presentation and intervention at the L'Oréal Lebanon 2025 plenary. "

Keynote Review

AMER ALKATHERI
Artificial Intelligence Manager at Barns
★★★★★

" اريد ان انصح كل من يريد ان يبدأ في مجال الذكاء الاصطناعي ان يحضر دورة بعنوان (رحلة الى عالم الذكاء الاصطناعي : من المفاهيم الأساسية الى التطبيق العملي) وهي دورة مبسطة تشرح اساسيات الذكاء الاصطناعي لغير المختصين فيها يلقيها الرائع Alaa Dalghan في DUBAI FUTURE "

Masterclass Review

AYMAN MATAR
General Manager at Quant Service
★★★★★

" Alaa is an exceptional technology explainer and keynote speaker who has a remarkable ability to break down complex concepts into engaging, relatable insights. Whether he's delivering a keynote or leading one of his AI courses, Alaa captivates his audience with a combination of deep expertise, storytelling, and practical examples that resonate with professionals at all levels. "

Keynote Review

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