GenAI in Telecom

TPR1065 | Expert-Led Live | Automation and Insights | Expert
Course Duration: 4 hours

This training introduces Generative AI and its relevance to telecom network planning, engineering, and operations. It covers Large Language Models (LLMs) and techniques like prompt engineering, Retrieval-Augmented Generation (RAG), and fine-tuning. Participants will explore how these tools can support tasks such as network analysis, automation, and decision support. Key considerations around data privacy, explainability, and ethics are also addressed.

Intended Audience

Network leadership, Planning, Engineering, and Operations

Objectives

After completing this course, the learner will be able to:

- Define AI, Machine Learning, Deep Learning and evolution to Generative AI
- Define Generative AI and list its benefits and challenges
- Define the role of LLM and foundation models
- Explain choices to augment foundation models and role of RAG
- Walk-through sample use cases of Gen AI in telecom
- List key challenges and future of Gen AI

Outline

1. Overview of AI, ML, and Generative AI
1.1 Introduction of AI and ML in Telecom
1.2 Evolution from AI to Generative AI
1.3 What and Why of GenAI
1.4 Discriminative AI vs. Generative AI
1.5 Key capabilities of Generative AI
1.6 Impact of Generative AI
1.7 Knowledge Check

2. Types of Generative AI Models
2.1 Large Language Models and Foundation Models
2.2 LLMs like GPT, Claude, Llama and Gemini
2.3 Prompt Engineering and GenAI
2.4 Zero-shot and Few-shot learning
2.5 Chain of Thought (CoT)
2.6 Knowledge Check

3. Customizing a Large Language Model (LLM)
3.1 Augmenting a LLM with Retrieval-Augmented Generation (RAG)
3.2 Refining a LLM with Fine Tuning
3.3 Web Grounding
3.4 LangChain and Prompt Chaining
3.5 Model Chaining
3.6 Knowledge Check

4. Gen AI Applications in Telecom
4.1 Optimization
4.2 Virtual Assistant
4.3 Fraud Detection and Security
4.4 Data Augmentation and Enhancement
4.5 Knowledge Check

5. Key Considerations of Gen AI
5.1 Challenges for implementing generative AI solutions
5.2 Data privacy and explainability
5.3 GenAI hallucinations
5.4 Model overfitting
5.5 Real-world uses of generative AI
5.6 Future of generative AI
5.7 Knowledge Check