Generative AI for Telecom Leaders

ANI_216 | Expert-Led Live | Automation and Insights | ⚙⚙⚙
Course Duration: 4 hours

The telecommunications industry stands on the precipice of a transformative revolution. Enter generative AI, a disruptive technology poised to reimagine every aspect of how we connect, manage networks, and engage with customers. In this four-hour course, we unveil the immense potential of generative AI in telecom. We'll examine Large Language Models (LLM), the key architecture component of Generative AI. We'll explore how AI can augment human expertise, freeing up valuable time for creative problem-solving and innovation. We'll demystify the hype surrounding generative AI, tackling common concerns and challenges regarding data privacy, explainability, and ethical considerations.

Intended Audience

Leadership in Network Planning, Engineering, Performance, and Operations

Objectives

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

- Define generative AI and list its benefits and challenges
- Explore key use cases for generative AI in Telco network operations
- Sketch GenAI ecosystem and key players at each layer
- Identify when GenAI is applicable versus ML/DL
- List popular GenAI models and their uses
- Compare GenAI deployment options for a Telco
- Show choices to augment foundation models with Telco's own data

Outline

1. Overview of AI
1.1 History of AI
1.2 Discriminative AI vs. Generative AI
1.3 Key Capabilities of Machine Learning

2. Introduction to Generative AI
2.1 Concept of generative AI
2.2 Key Capabilities of generative AI
2.3 Impact of generative AI in telecom

3. Types of Generative AI Models
3.1 Introduction to GenAI Models
3.2 Large Language Models and Foundation Models
3.3 LLMs like GPT, Claude, Llama and Gemini
3.4 Image Generation Models like DALL-E 3 and Stable Diffusion
3.5 Open Source models: Hugging Face and Ollama
3.6 Prompt Engineering and GenAI
3.7 Zero-shot and Few-shot learning
3.8 Chain of Thought (CoT)

4. Customizing a Large Language Model (LLM)
4.1 Building a LLM
4.2 Augmenting a LLM with Retrieval Augmented Generation (RAG)
4.3 Refining a LLM with Fine Tuning
4.4 Web Grounding
4.5 LangChain and Prompt Chaining
4.6 Model Chaining

5. Key Applications in Telco Networks
5.1 Network Optimization
5.2 Network Virtual Assistant
5.3 Fraud Detection and Security
5.4 Data Augmentation and Enhancement

6. Benefits and Challenges
6.1 Benefits of generative AI in telecom
6.2 Challenges for implementing generative AI solutions
6.3 Data privacy and Explainability
6.4 GenAI Hallucinations
6.5 Model Overfitting

7. Case Studies and Future Trends
7.1 Real-world uses of generative AI in telecom
7.2 Future of generative AI in telecom