# AI in practice and 5G Data analytics

This training program explores the convergence of Artificial Intelligence (AI) and 5G technologies, starting from generative AI fundamentals and moving toward advanced telecom applications. Participants will learn the core principles of LLMs, practical deployment strategies, and the specific ways AI enhances 5G network operations, analytics, and future 6G developments. The course balances theoretical insights with hands-on exercises and real-world telecom case studies.

## Audience

IT and Telecom professionals, Data analysts, engineers, CXO

## 1) Generative AI & Large Language Models

- Overview of Generative AI & LLMs
- Understanding and mitigating hallucinations
- Technology behind ChatGPT

## 2) Hands-On with Hugging Face & LLM Deployment Paths

- Exploring Hugging Face and model parameters
- LLM investment options: Build, Enhance, or Fine-Tune
- Running LLMs on-device
- Practical exercise: Creating a simple generative AI model

## 3) AI's Strategic Value in Telecom

- Applications of AI by telecom operators
- Importance of data in telecom use cases
- Benefits of AI for operators

## 4) AI in 5G: Key Application Areas

- AI-Driven Network Operations
- AI-Enabled Real-Time Optimization
- AI-Based Fault Detection & Management
- AI-Powered Subscriber Experience

## 5) Introduction to 5G Data Analytics

- NWDAF overview
- Available NWDAF solutions
- NWDAF use case examples

## 6) 5G + AI for Network Operations & Maintenance

- Intelligent network operations
- Automated fault detection and resolution
- Dynamic configuration management
- Smart resource allocation
- Enhanced performance and reliability

## 7) Case Study: AI-Driven 5G Data Analytics

## 8) AI/ML in 5G and Open RAN

- Machine learning in the RIC
- Traffic steering use case
- Quality of experience use case
- Quality of service use case
- Massive MIMO beamforming use cases
- RAN slicing use case
- Dynamic handover use case

## 9) AI-RAN Alliance and Industry Activities

- AI and RAN initiatives
- AI on RAN developments
- AI for RAN applications