

AI+ Telecommunications™

Duration: 40 hours

Course Overview

This 5-days course on AI+ Telecommunications provides an in-depth exploration of how artificial intelligence enhances various aspects of the telecom industry. Key topics include the implementation of 5G technologies, which offer improved speed and connectivity, and the critical roles of Quality of Service (QoS) and Quality of Experience (QoE) in ensuring optimal network performance and user satisfaction. Participants will learn about AI-driven network optimization, predictive maintenance, and cybersecurity strategies to safeguard telecom infrastructure. The curriculum also covers natural language processing for customer interactions and IoT integration for smart network management. Through hands-on projects, learners will apply AI techniques to real-world scenarios, culminating in a capstone project that synthesizes their knowledge and skills in addressing contemporary challenges in telecommunications. This course equips participants with the expertise to leverage AI effectively in their organizations, driving innovation and enhancing service delivery.

Course Prerequisites

- Telecommunications Knowledge: Basic understanding of telecommunications concepts and technologies.
- Programming Skills: Familiarity with programming, preferably in Python.
- Data Analysis: Basic knowledge of data analysis techniques is beneficial.
- AI Familiarity: While prior experience with AI is helpful, it is not required to enroll in this course.

Course Agenda

Module 1: Introduction to AI in Telecommunications

- AI Fundamentals in Telecommunications
- AI Technologies for Telecom
- Emerging Trends in AI for Telecommunications
- Case Study
- Hands-on

Module 2: Data Engineering for Telecom AI

- Foundations of Telecom Data Engineering
- Designing and Managing the Telecom Data Pipeline

- Data Engineering Tools and Technology
- Case Study: SK Telecom's Big Data Analytics with Metatron Discovery
- Hands-on Exercise

Module 3: AI for 5G Networks

- Introduction to 5G
- AI Applications in 5G
- Enhancing Network Management with AI
- Case Study
- Hands-On

Module 4: AI in Network Optimization

- Predictive Network Management
- Performance Enhancement Techniques
- Traffic Management Strategies
- Case Study
- Hands-On

Module 5: AI for Network Security

- Security Threats in Telecom
- AI Security Solutions
- Advanced Security Frameworks
- Case Study
- Hands-On

Module 6: Enhancing Customer Experience with AI

- Personalized Customer Service
- Service Quality Improvement
- Enhancing Customer Engagement
- Case Study

- Hands-on

Module 7: IoT Integration with Telecommunications

- IoT Fundamentals
- Managing IoT Security Challenges
- Enhancing Operational Efficiency with IoT
- Case Study
- Hands-on

Module 8: AI-Integrated Network Operations Centers (NOCs)

- Transitioning to AI-driven NOCs: From reactive to predictive operations
- Automating escalations and root cause analyses
- Closed-loop automation with AI and SDN integration
- Designing AI-ready network architectures
- Change management strategies for AI rollouts in operations
- Case Study: Implementation of AI assistants in NOCs
- Case Study: Nokia's Integration of AI in Network Optimization

Module 9: Ethical Considerations in Artificial Intelligence

- Ethical Implications of Using Artificial Intelligence
- Responsible Deployment Practices
- Emerging Trends and Challenges
- Case Study
- Hands-on

Module 10: Capstone Project

- Capstone Project