

Program İsmi: AIOps 2. Grup

Program Eğitimleri:

- Anomaly Detection With AI
- Troubleshooting With AI Agents
- AI ChatBot Deployment With Docker

Program amacı:

Bu eğitimlerin temel amacı, katılımcıları makine öğrenme, derin öğrenme ve üretken yapay zeka alanlarında model geliştirme, network anomali tahmini yapma, chatbot geliştirme gibi konularda çözümler geliştirmelerine yardımcı olmaktır. Eğitimler, pratik uygulamalar ve gerçek dünya senaryoları içeren projelerle katılımcıları AI destekli tahminleme, sorun giderme ve private cloud içinde chatbot deploy etme, local açık kaynak yapay zeka servisleri geliştirme alanlarında profesyonel bir seviyeye taşımayı hedeflemektedir.

Eğitim Tarihleri:

EĞİTİM ADI	TARİH
AIOps 2. Grup	27 Mart - 8 Ağustos
Anomaly Detection With AI	27-28 Mart
	28-29-30 Nisan
Troubleshooting With AI Agents	20-21 Mayıs
	18-19-20 Haziran
AI ChatBot Deployment With Docker	9-10-11 Temmuz
	7-8 Ağustos

Eğitim İçerikleri:

1.Anomaly Detection With AI

Eğitim Kapsamı:

Duration: 5 Days / 35 Hours

Course Prerequisites:

Watching Knowledge Club Online Data Science With Python Video

Course Description:

This course is a comprehensive 5-day program designed to empower participants with the skills to use artificial intelligence for anomaly prediction in diverse domains such as stock markets, weather forecasting, and network monitoring.

This course integrates machine learning, deep learning, and time series forecasting techniques to provide a strong foundation for building AI-based anomaly detection solutions.

Through hands-on projects and real-world applications, students will gain the expertise to implement cutting-edge AI techniques using Python, Recurrent Neural Networks (RNN), and Prophet.

Course Objectives:

By the end of this course, participants will be able to:

Understand the core principles and methods of machine learning.
Perform regression analysis (linear, multiple linear, polynomial) for stock market predictions.
Build and evaluate machine learning pipelines with cross-validation, Lasso, and Standard Scaler.
Save and load machine learning models for efficient reusability.
Develop classification models using Multi-Layer Perceptrons.
Understand the fundamentals of neural networks and deep learning.
Design and implement deep neural networks for various use cases.
Train Artificial Neural Networks (ANNs) for numerical, binary, and categorical classification tasks.
Use advanced techniques like early stopping and multiple callbacks to optimize deep learning models.
Learn the basics of time series forecasting and its applications in anomaly detection.
Predict stock market trends using RNN-LSTM and Prophet models.
Forecast weather conditions and rainfall using Prophet.
Detect network anomalies using Prophet and LSTM with advanced techniques like SMOTE, Standard Scaler, Batch Normalization, and Dropout.
Predict network traffic trends and analyze behavior with LSTM models.

Course Summary:

- 1: Machine Learning With Python
- 2: Deep Learning With Python
- 3: Time Series With Recurrent Neural Networks and Prophet

Course Index:**Part 1: Machine Learning With Python**

- -What is Machine Learning
- -Machine Learning Methods
- -Supervised Machine Learning Regression Introduction
- -Linear Regression: Stock Market Prediction
- -Multiple Linear Regression: Stock Market Prediction
- -Polynomial Regression: Stock Market Prediction
- -Multiple Polynomial Regression: Stock Market Prediction
- -How to Save Data Model and Load
- -Cross Validation, Pipeline & Lasso
- -Standard Scaler
- -Classification With Multi Layer Perceptron

Part 2: Deep Learning With Python

- -Introduction To Deep Learning
- -What is Neural Network ?
- -What is Deep Neural Network ?
- -How to Design Deep Neural Network ?
- -Artificial Neural Networks
- -Numerical Label Artificial Neural Networks
- -Classification With Binary Label Artificial Neural Networks
- -Classification With Multiple Categorical Label Artificial Neural Networks(One Hot Encoder)

- -Early Stop Callback
- -Multiple Early Stop CallBacks

Part 3: Time Series With Recurrent Neural Networks and Prophet

- -Recurrent Neural Networks
- -Stock Market Prediction With RNN LSTM
- -Stock Market Prediction With Prophet
- -Predict Weather Condition & Rain Fall Per Cubic Meter With Prophet
- -Network Anomaly Detection With Prophet
- -Network Anomaly Detection With LSTM(One Hot Encoding, Smote, Standard Scaler, Batch Normalization, DropOut)
- -Network Traffic Prediction With LSTM

2.Python Troubleshooting With AI Agents

Eğitim Kapsamı:

Duration: 5 Days / 35 Hours

Course Description:

This course is an intensive 5-day program designed to equip participants with cutting-edge knowledge and practical skills in leveraging AI agents for advanced troubleshooting.

The course delves into Generative AI, the capabilities of Llama-based models, Retrieval-Augmented Generation (RAG), and multi-modal AI agents.

Participants will learn how to gather data, develop APIs, fine-tune AI models, and build innovative applications like chatbots and dashboards to enhance troubleshooting workflows.

Real-world scenarios are incorporated to provide a hands-on experience, ensuring participants are industry-ready.

Course Objectives:

By the end of this course, participants will be able to:

Understand the fundamentals of Generative AI and Large Language Models (LLMs).

Differentiate between Generative AI and traditional AI systems.

Learn the basics of tokenization and explore embeddings models for code and text.

Implement sentimental similarity and classification using embeddings models.

Use Selenium to gather and process data from websites.

Install and configure Local Ollama and Llama environments.

Develop APIs with Flask-RestX to integrate Llama into automation workflows.

Create structured DataFrames with Llama Vision for efficient troubleshooting.

Build network troubleshooting APIs using Local Ollama and Llama 3.3.

Understand RAG systems and their applications in AI-driven troubleshooting.

Develop systems to chat with documents using Llama 3.3, Sentimental LLM, and RAG/Qdrant systems.

Build interactive RAG-based chatbots with Gradio and real-time dashboards with Streamlit.

Learn advanced fine-tuning techniques like quantization and Lo-Ra (Low-Rank Adaptation).

Fine-tune Llama models with custom data for specific intents and use cases.

Build and refine intent-classification models tailored to troubleshooting needs.

Implement multi-modal AI agents capable of code generation, execution, and testing.

Integrate Llama and AutoGen for end-to-end troubleshooting workflows.

Course Summary:

- 1:Generative AI
- 2:Working With Llama
- 3: Retrieval-Augmented Generation
- 4: Fine-Tuning
- 5: Multi-Modal AI Agents

Course Index:

Part 1:Generative AI

- -What is Generative AI?
- -What is LLM?
- -Generative AI versus Traditional AI
- -Tokenization
- -Code to Text Token Embeddings Model
- -Text to Text Token Embeddings Model
- -Text to Code Token Embeddings Model
- -Sentimental Similarity With Sentimental Embeddings Model
- -Sentimental Classification With Sentimental Embeddings Model

Part 2:Working With Llama

- -Gathering Data From Web Sites With Selenium
- -Installing Local Ollama
- -Developing Local Llama
- -API Development With Flask-RestX
- -Rest API Query Management At API Development
- -Developing Local API From Llama With Flask-RestX
- -Creating DataFrames With Data Gathered From Web Sites Via Selenium & Llama Vision
- -Network Troubleshoot API Development With Local Ollama & Llama 3.3 via Flask-Restx

Part 3: Retrieval-Augmented Generation

- -What is RAG?
- -Chat With Your Documents via Llama 3.3, Sentimental LLM & RAG Systems
- -Chat With Your Documents via Llama 3.3, Sentimental LLM & Qdrant RAG Systems
- -Developing Rag ChatBot With Local Llama API and Gradio
- -Developing Rag DashBoard With Local Llama API and Streamlit

Part 4: Fine-Tuning

- -What is Quantization?
- -What is Lo-Ra?
- -Fine-tune Llama With Custom Data
- -Intent-Classification
- -Fine-tune Intent Classification Model With Custom Data

Part 5: Multi-Modal AI Agents

- -Code Generation With Llama & Code Execution/Testing With AutoGen At MultiModal AI Agent

3.AI ChatBot Deployment With Docker

Eğitim Kapsamı:

Duration: 5 Days / 35 Hours

Course Prerequisites:

- Watching Knowledge Club Online Network Automation Video
- Watching Knowledge Club Online Docker Video

Course Description:

This course is designed to provide hands-on expertise in building, securing, and deploying AI-driven chatbot services using containerized environments.

Participants will explore practical implementations of Docker, Flask-RestX, Vault, and LDAP to create scalable and secure APIs for enterprise chatbot deployment.

The course features the development of the Turkcell Mentor Chatbot, utilizing Llama, Sentimental LLMs, and Retrieval-Augmented Generation (RAG) systems to enable advanced conversational capabilities.

The program also delves into best practices for deploying chatbots with load balancing, containerized AI APIs, and robust security mechanisms, including two-factor authentication.

Course Objectives:

By the end of this course, participants will be able to:

Practical experience in creating and deploying secure REST APIs.

Expertise in building and integrating AI chatbots with advanced LLM and RAG systems.

Knowledge of Docker for containerization and deploying scalable chatbot services.

Skills in securing APIs with Vault, LDAP, and two-factor authentication.

The ability to deploy load-balanced, containerized chatbot solutions for enterprise environments.

Course Index:

- -HTTPS: SSL Certificate Creation With Python At Ubuntu
- -Rest API With HTTPS
- -Uploading & Downloading Excel/CSV/JSON Files With Flask-RestX
- -Uploading & Downloading Image Files With Flask-RestX
- -Basic Authentication With Python
- -Basic Authentication With Vault & Python
- -Developing Turkcell Mentor Chatbot Model With Llama, Sentimental LLMs & RAG Systems
- -Configuring LDAP
- -Developing Turkcell Mentor Chatbot API With HTTPS, Vault, Two Factor Authentication With Json Web Token & LDAP
- -Accessing Turkcell Mentor Chatbot API via Python With HTTP Methods
- -Containerize Turkcell Mentor Chatbot API With Gradio/Streamlit & Docker
- -Deploy Turkcell Mentor Chatbot Service With Load-Balancing, Containerized AI API and LDAP