Data & AI Boot-Kon Event - Munich

**Title: Boot-Kon Data & AI Event Structure & Instructions**

**Summary**
Brief explanation of the event structure and links to the user manuals

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**Date**: 2024-11-22

**Estimated Completion Time**: 6~8 hours

## Use Case Introduction

- About the company: FraudFix Technologies is a cutting-edge company focused on making financial transactions safer for Google Cloud enterprise customers across industries (financial institutions, online retailers, etc ...)
- Your role: As a senior data analytics/AI engineer at FraudFix Technologies, you will tackle the challenges of making financial transactions safer using machine learning. Your work will involve analyzing vast amounts of transaction data to detect and prevent fraud, as well as assessing customer sentiment regarding the quality of transaction services. You will leverage a unique synthetic dataset, which includes auto-generated data by Google Gemini and a public European credit card transaction dataset that has been PCA transformed and anonymized. This dataset will be used to train your models, reflecting real-world applications of GCP Data & AI in enhancing financial safety.

## Understand the Structure of the Event

During this event, your main focus will be on completing the labs, which are clearly marked with the label “[LAB]” in the instruction manuals. These labs include detailed step-by-step instructions to guide you. In addition to the labs, you’ll face several challenges that you’ll need to solve on your own or with your group. Groups will be assigned by the event organizers at the start of the event.
We will decommission the environments provided to you by Google a few hours after the event.

## Understand the Fraudfix Use Case

Follow this document

## [Hands-on Lab - 1] Setup your environment
Follow Step by Step Instructions here

## [Hands-on Lab - 2] Data Ingestion with BigLake
Follow Step by Step Instructions here

## [Hands-on Lab - 3] ELT with Dataform and LLM
Follow Step by Step Instructions here

**<Lunch Time: 60 Minutes>**

## [Hands-on Lab - 4] ML Operations with Vertex AI
***Note: You can start Hands-on Lab 5 while the Hands-on Lab 4 training jobs in Notebooks 2 & 3 are still running.***
Follow Step by Step Instructions here

## [Hands-on Lab - 5] Agent Builder and Gemini
Follow Step by Step Instructions here

**<Coffee Break: 30 Minutes>**

## Demo Data Canvas & Looker Studio
No Instructions

## Architecture Challenge
No Instructions

**<Event Closure>**

## Appendices

- *Google Cloud Data Analytics in 10 minutes*
  *https://www.youtube.com/watch?v=g-f_mWXK9sU*
- *Dataproc in a minute*
  *https://www.youtube.com/watch?v=Jj6mp7Sam10*
- *Run Spark and Hadoop faster with Dataproc Duration : Duration 16 minutes*
  *https://www.youtube.com/watch?v=shzKmZ6Yqtk*
- *What is Cloud IAM? Duration 10 minutes*
  *https://www.youtube.com/watch?v=xQCIVtAECdg*
- *Virtual Private Cloud in a minute*
  *https://www.youtube.com/watch?v=hS_uvz4ohbo*
- *What is Vertex AI ? Duration: 7 minutes*
  *https://www.youtube.com/watch?v=gT4qqHMiEpA*

- *BigQuery Spotlight Playlist:  Duration 90 minutes*
  *https://youtube.com/playlist?list=PLIivdWyY5sqLAbldmcMwsxWg-w8Px34MS&si=WlbLukGRZk88tOjx*
- *Principal Component Analysis (PCA) in Machine Learining*
  *https://towardsdatascience.com/a-complete-guide-to-principal-component-analysis-pca-in-machine-learning-664f34fc3e5a*
- *Principal Component Analysis (PCA)  Video Explanation: https://www.youtube.com/watch?v=aSfvqTQQkcs*
- *PCA Visualization : https://setosa.io/ev/principal-component-analysis/*