

Sela.



GCPBigData

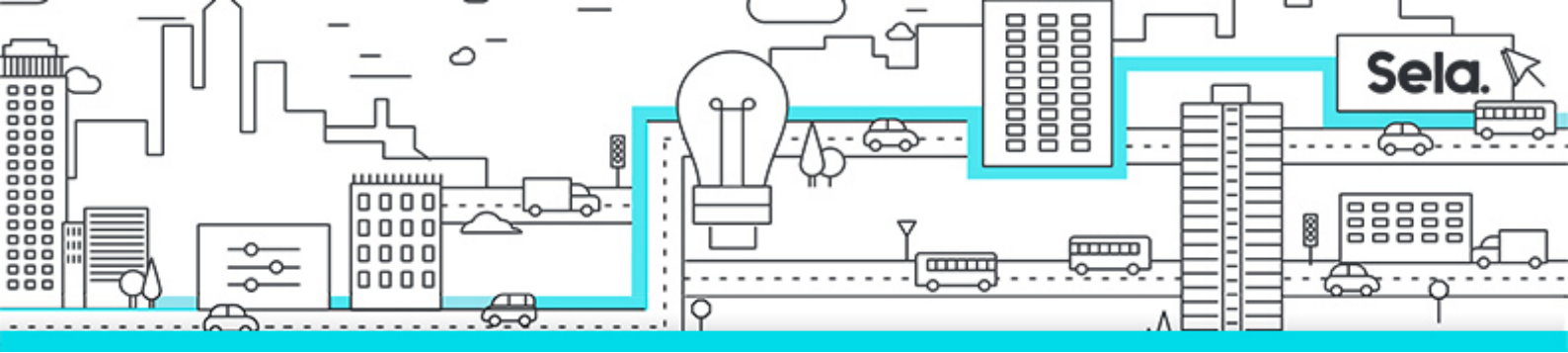
Google Cloud Big Data and Machine Learning Fundamentals



college@sela.co.il

03-6176666





Google Cloud Big Data and Machine Learning Fundamentals

GCPBigData - Version: 1

1 day course

Description:

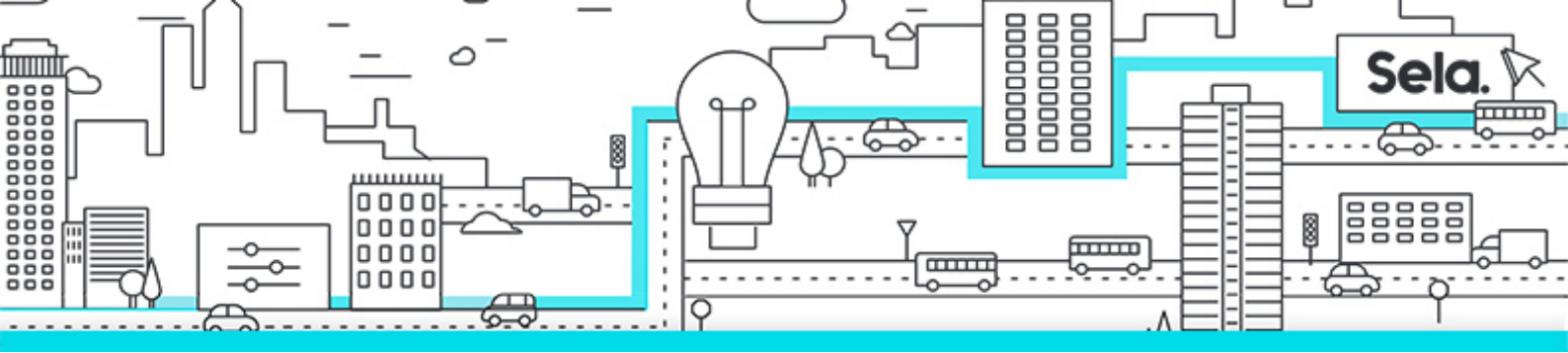
This course introduces participants to the big data capabilities of Google Cloud. Through a combination of presentations, demos, and hands-on labs, participants get an overview of Google Cloud and a detailed view of the data processing and machine learning capabilities. This course showcases the ease, flexibility, and power of big data solutions on Google Cloud

Objectives:

- Recognize the data-to-AI lifecycle on Google Cloud and the major big data and machine learning products.
- Design streaming pipelines with Dataflow and Pub/Sub.
- Analyze big data at scale with BigQuery.
- Identify different options to build machine learning solutions on Google Cloud.
- Describe a machine learning workflow and the key steps with Vertex AI.
- Build a machine learning pipeline using AutoML

Topics:

- **Course Introduction**
 - This section welcomes learners to the Big Data and Machine Learning Fundamentals
 - course and provides an overview of the course structure and goals.
 - Objectives:
 - Recognize the data-to-AI lifecycle on Google Cloud



- • Identify the connection between data engineering and machine learning

- **Big Data and Machine Learning on Google Cloud**

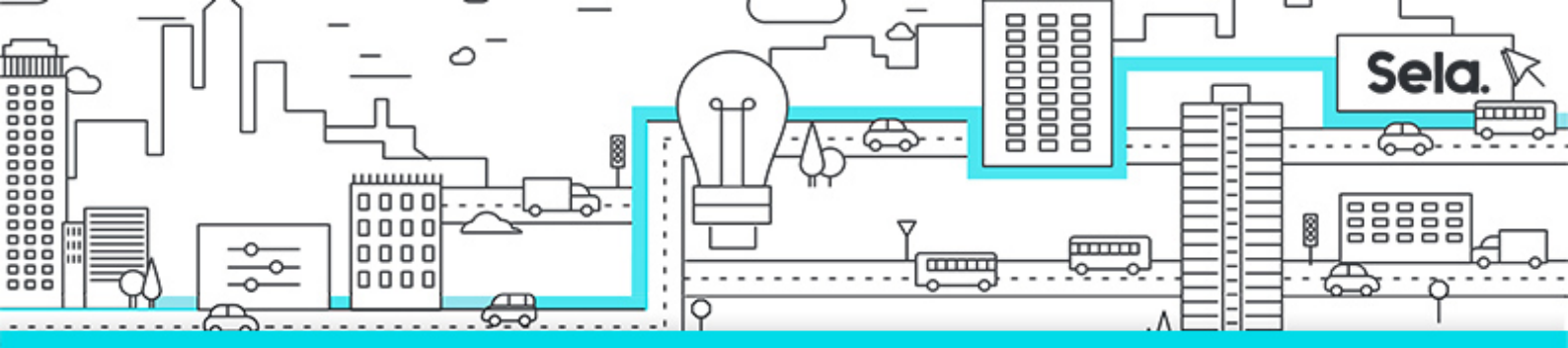
- This section explores the key components of Google Cloud's infrastructure. We
- introduce many of the big data and machine learning products and services that
- support the data-to AI lifecycle on Google Cloud.
- Objectives:
 - • Identify the different aspects of Google Cloud's infrastructure.
 - • Identify the big data and machine learning products on Google Cloud.
- Activities:
 - • Lab: Exploring a BigQuery Public Dataset
 - • Quiz

- **Data Engineering for Streaming Data**

- This section introduces Google Cloud's solution to managing streaming data.
- It examines an end-to-end pipeline, including data ingestion with Pub/Sub, data
- processing with Dataflow, and data visualization with Looker and Data Studio.
- Objectives:
 - • Describe an end-to-end streaming data workflow from ingestion
 - to data visualization.
 - • Identify modern data pipeline challenges and how to solve them at scale
 - with Dataflow.
- Activities:
 - • Build collaborative real-time dashboards with data visualization tools.
 - • Lab: Creating a Streaming Data Pipeline for a Real-Time Dashboard with Dataflow
 - • Quiz

- **Big Data with BigQuery**

- This section introduces learners to BigQuery, Google's fully managed, serverless



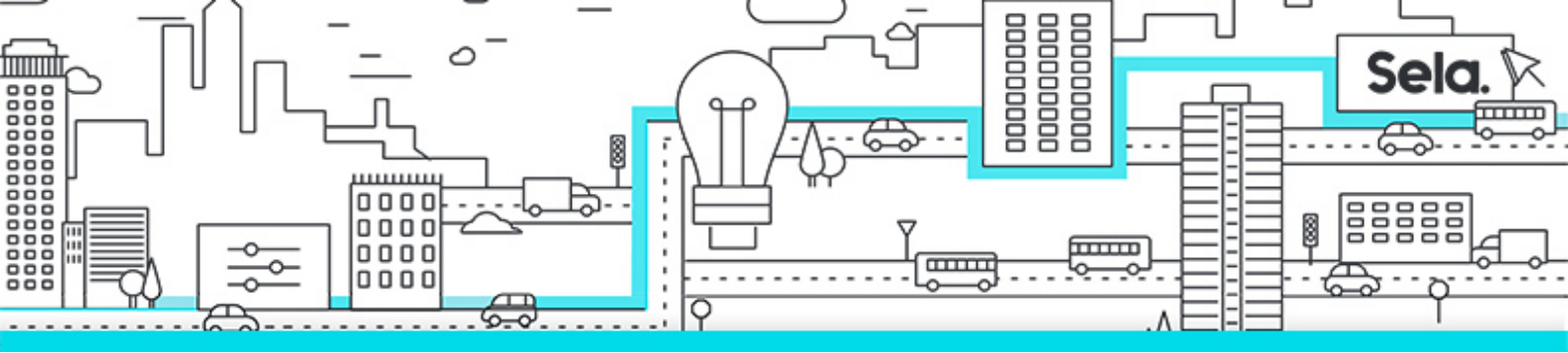
- data warehouse. It also explores BigQuery ML and the processes and key commands
- that are used to build custom machine learning models.
- • Describe the essentials of BigQuery as a data warehouse.
- • Explain how BigQuery processes queries and stores data.
- Objectives:
- • Define BigQuery ML project phases.
- • Build a custom machine learning model with BigQuery ML.
- Activities:
- • Lab: Predicting Visitor Purchases Using BigQuery ML
- • Quiz

• Machine Learning Options on Google Cloud

- This section explores four different options to build machine learning models on Google Cloud. It also introduces Vertex AI, Google's unified platform for building
- and managing the lifecycle of ML projects.
- Objectives:
- • Identify different options to build ML models on Google Cloud.
- • Define Vertex AI and its major features and benefits.
- • Describe AI solutions in both horizontal and vertical markets.
- Activities- Quiz

• The Machine Learning Workflow with Vertex AI

- This section focuses on the three key phases—data preparation, model training, and
- model preparation—of the machine learning workflow in Vertex AI. Learners can
- practice building a machine learning model with AutoML.
- Objectives:
- • Describe a ML workflow and the key steps.
- • Identify the tools and products to support each stage.



- • Build an end-to-end ML workflow using AutoML.
- • Lab: Vertex AI: Predicting Loan Risk with AutoML
- • Quiz

• **Course Summary**

- This section reviews the topics covered in the course and provides additional
- resources for further learning.
- Objectives:
- Describe the data-to-AI lifecycle on Google Cloud and identify the major products of
- big data and machine learning.