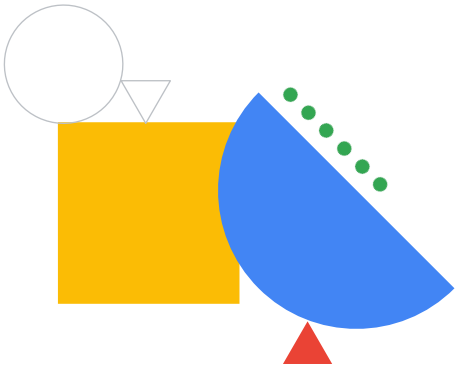
Google Cloud

Google Cloud Big Data and Machine Learning Fundamentals



Instructor-led training

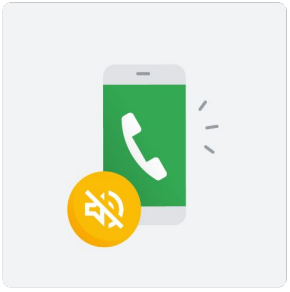
Welcome

Welcome to the Google Cloud Big Data and Machine Learning Fundamentals course!

Full name

Role, organization

Etiquette



No calls

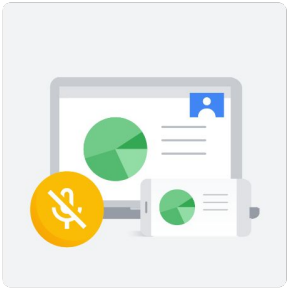
No recording

Ask questions

To ensure an effective and respectful learning environment for everyone here today:

- Please silence your phone and take calls outside the classroom.
- Refrain from recording this class. It's prohibited.
- Ask questions when you have them.

Etiquette



Mute microphone

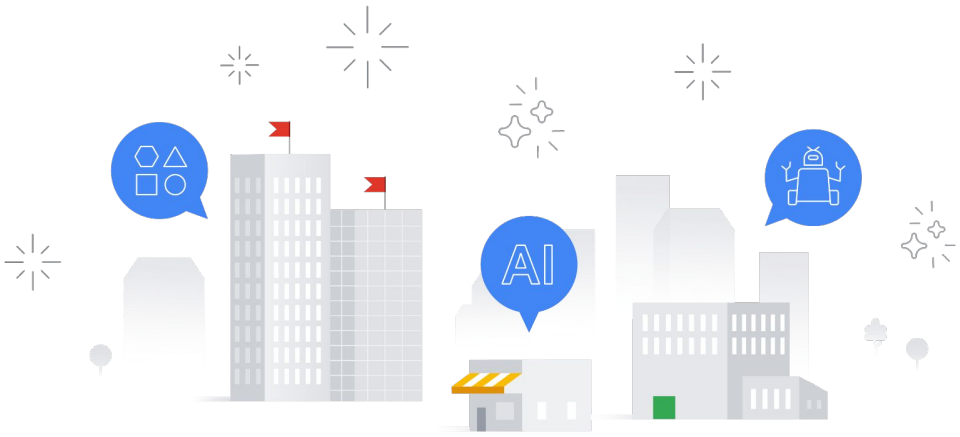
No recording

Ask questions

To ensure an effective and respectful learning environment for everyone here today:

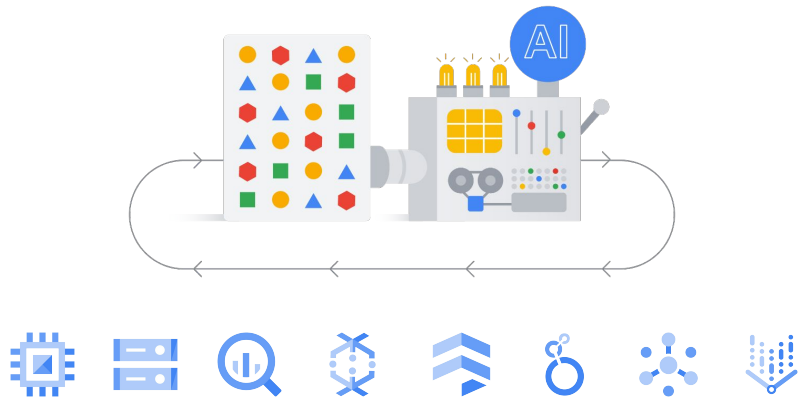
- Mute your microphone.
- Refrain from recording this class. It's prohibited.
- Ask questions via the chat.

It's an exciting time for big data, AI, and ML



It's an exciting time to be exploring big data, artificial intelligence, and machine learning. Innovation in this field is presenting new opportunities that weren't available just a few years ago, and by joining us on this course we hope you'll be putting yourself in a position to benefit from these technologies.

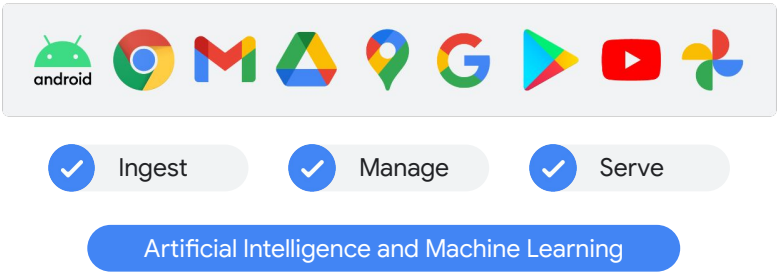
Google Cloud supports the data-to-AI lifecycle



This course provides an introduction to the tools and technologies Google Cloud offers to work with large data sets and then integrate that data into the artificial intelligence and machine learning lifecycle.

Data and AI have a powerful partnership; data is the foundation of every application integrated with artificial intelligence. Without data, there is nothing for AI to learn from, no pattern to recognize, and no insight to glean.

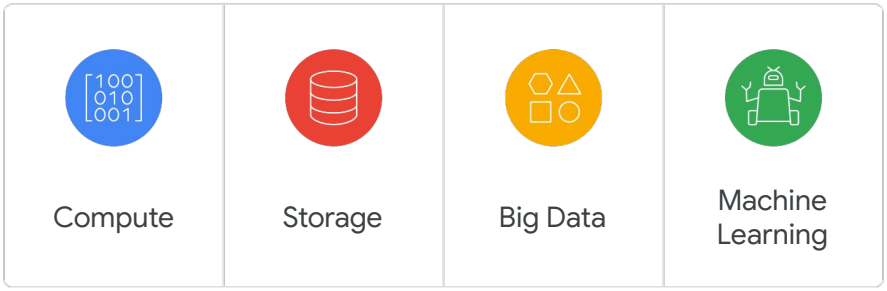
Google applies AI/ML in all products



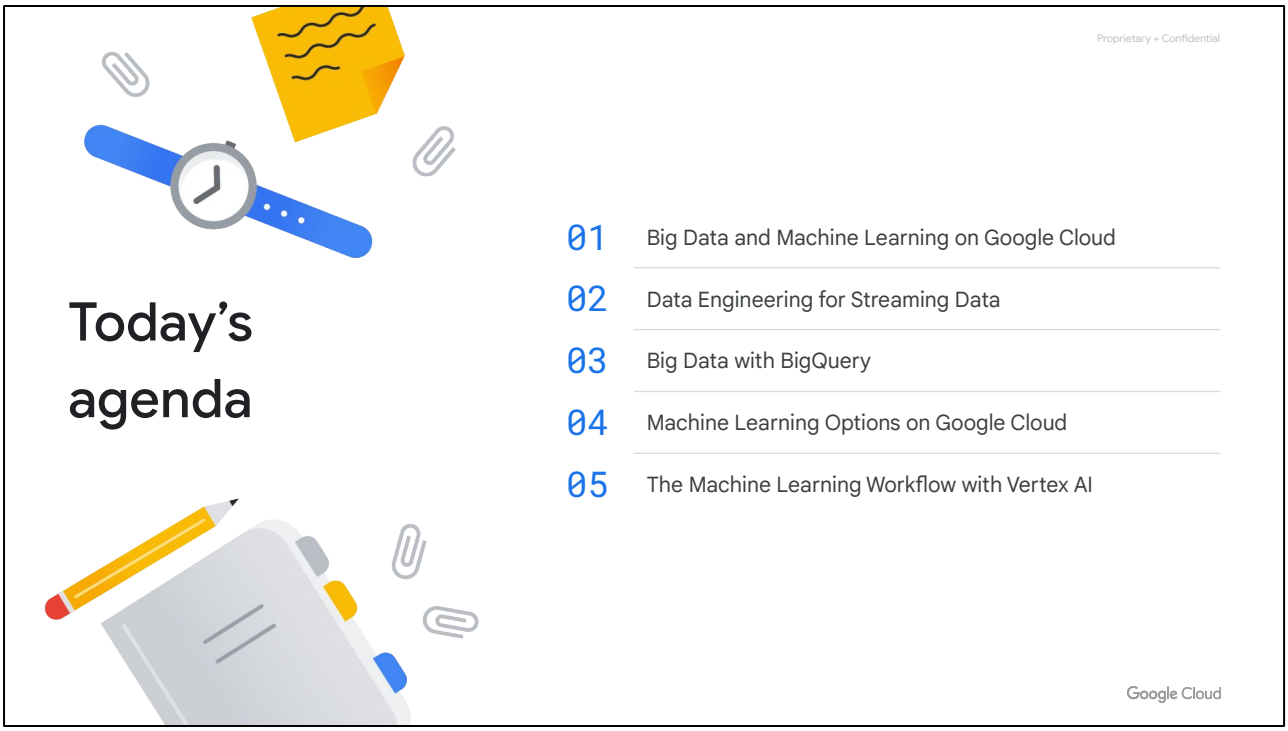
Google has nine products with over one billion users: Android, Chrome, Gmail, Google Drive, Google Maps, Google Search, the Google Play Store, YouTube, and Photos. That's a lot of data being processed every day!

To meet the needs of a growing user base, Google has developed the infrastructure to ingest, manage, and serve high quantities of data from these applications. And artificial intelligence and machine learning have been integrated into these products to make the user experience of each even more productive. This includes features like search in Photos, recommendations in YouTube, or Smart Compose in Gmail.

Google Cloud offerings



Google Cloud offerings can be broadly categorized as compute, storage, big data, and machine learning services for web, mobile, analytics, and backend solutions.The main focus of this course is on big data and machine learning.

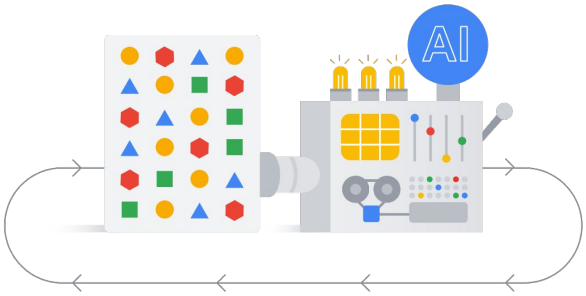


There are 5 modules in today's course, rounded off with a short summary and review session.

Here's our agenda:

1. In the first module, you'll be introduced to big data and machine learning on Google Cloud. This includes Google Cloud's infrastructure and big data and machine learning products.
2. In the second module of the course, you'll explore data engineering for streaming data. This includes how to build a streaming data pipeline, from ingestion with Pub/Sub, to processing with Dataflow, and finally, to visualization using Looker and Looker Studio.
3. After that, you'll explore big data with BigQuery, Google's popular data warehouse tool, and BigQuery ML, the embedded ML functionality used for developing machine learning models directly in BigQuery.
4. From there, you'll compare the four options provided by Google Cloud to build and deploy a machine learning model.
5. And in the final module of the course, you'll learn how to build a machine learning workflow from start to finish using Vertex AI, a unified platform that brings all the components of the machine learning ecosystem and workflow together.

Target audience



Data-to-AI lifecycle

- Product managers
- Data analysts
- Data engineers
- Data scientists
- ML developers
- ML engineers

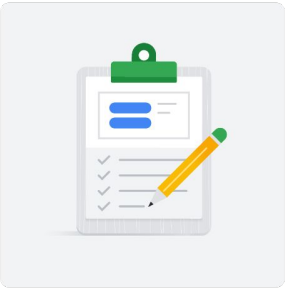
This course was designed for a wide range of learners. This includes anyone at an organization involved or interested in the data-to-AI lifecycle, such as product managers, data analysts, data engineers, data scientists, ML developers, and ML engineers.

While you'll be learning about services and concepts that are specific to big data and machine learning in this course, remember that, because this is a fundamentals-level course, some content will be geared toward learners who are entirely new to cloud technologies.

Course format

Presentations

Quizzes



Hands-on labs

Through a combination of presentations, quizzes, and hands-on labs, this one day, instructor-led class will provide you an introduction to the tools and technologies Google Cloud offers to work with large data sets and then integrate that data into the artificial intelligence and machine learning lifecycle.

Hands-on labs

For each lab, Qwiklabs offers:

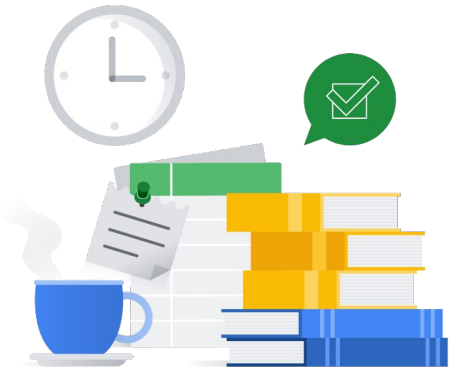
- A set of resources for a fixed amount of time
- A clean environment with permissions

During each module today we'll be putting what we've learned into practice through hands-on labs. These are run through Google's QwikLabs platform. For each lab, Qwiklabs offers a set of resources for a fixed amount of time and a clean environment with permissions.

I'll let you know when it's time to launch a lab. Once you start a lab, you won't be able to pause and restart it, so you'll need a continuous block of time to complete the work.

For those of you who aren't familiar with labs, I'll explain more about them when we reach one in the course.

Helpful knowledge



- No prerequisites

Helpful to **be familiar with**

- Some knowledge of SQL
- Basic machine learning concepts

And although this course has no prerequisites, some knowledge of SQL and basic machine learning concepts will be helpful.

cloud.google.com/training

You can learn more about where this course fits into the learning path for your specific role and all the training courses offered by Google Cloud at cloud.google.com/training.

Any questions before we begin?