Cloud Artificial Intelligence (AI)

Google Cloud AI offers cloud services for businesses and individuals to leverage pre-trained models for custom artificial intelligence tasks through the use of REST APIs. It also exposes services for developing custom models for domain use cases such as AutoML Vision for image classification and object detection tasks and AutoML tables to deploy AI models on structured data.

Google Cloud AI services in Figure 2-4 include Cloud AutoML (train custom machine learning models leveraging transfer learning), Cloud Machine Learning Engine (for large-scale distributed training and deployment of machine learning models), Cloud TPU (to quickly train large-scale models), Video Intelligence (train custom video models), Cloud Natural Language API (extract/analyze text from documents), Cloud Speech API (transcribe audio to text), Cloud Vision API (classification/segmentation of images), Cloud Translate API (translate from one language to another), and Cloud Video Intelligence API (extract metadata from video files).
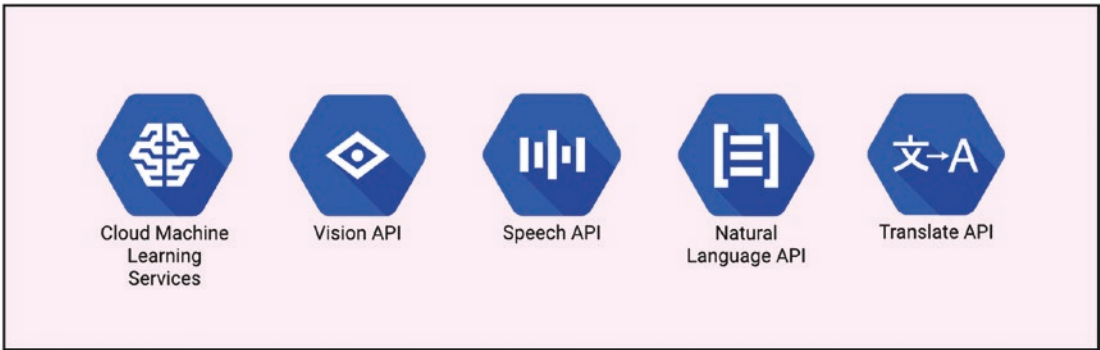

Figure 2-4. *Cloud AI services*

This chapter provides a high-level overview of the products and services offered on Google Cloud Platform.

The next chapter will introduce the Google Cloud software development kit (SDK) for interacting with cloud resources from the command line on the local machine and the cloud command-line interface (CLI) for doing the same via the cloud console interface on GCP.

CHAPTER 3

The Google Cloud SDK and Web CLI

GCP provides a command-line interface (CLI) for interacting with cloud products and services. GCP resources can be accessed via the web-based CLI on GCP or by installing the Google Cloud software development kit (SDK) on your local machine to interact with GCP via the local command-line terminal.

GCP contains shell commands for a wide range of GCP products such as the Compute Engine, Cloud Storage, Cloud ML Engine, BigQuery, and Datalab, to mention just a few. Major tools of the Cloud SDK include

- gcloud tool: Responsible for cloud authentication, configuration, and other interactions on GCP

- gsutil tool: Responsible for interacting with Google Cloud Storage buckets and objects

- bq tool: Used for interacting and managing Google BigQuery via the command line

- kubectl tool: Used for managing Kubernetes container clusters on GCP

The Google Cloud SDK also installs client libraries for developers to programmatically interact with GCP products and services through APIs.[1] As of this time of writing, the Go, Java, Node.js, Python, Ruby, PHP, and C# languages are covered. Many more are expected to be added to this list.

This chapter works through setting up an account on GCP, installing the Google Cloud SDK, and then exploring GCP commands using the CLI.

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[1]APIs stands for application programming interfaces, which are packages and tools used in building software applications.