AUTOML ON GCP

- AUTOML enables developers with limited machine learning and programming expertise to train high-quality models
- It Leverages Google's proprietary research technology and also relies on Google's state-of-the-art transfer learning and neural architecture search technology
- AutoML is a fully managed environment
- Users can train, evaluate, improve, and deploy custom machine learning models to solve problems for Vision, Translation, and Natural Language **by using a simple graphical user interface within a few minutes**
- AutoML is, by far, the most complete automated machine learning offerings in the market

Comparison of AUTOML and Custom Training

	AUTO ML	Custom Training
Data science expertise	No	Yes, to develop the training application & data preparation
Programming ability	No, Auto ML is codeless	Yes, to develop the training application
Training Time	Less	More
Limits of Machine learning objective	Must target one AutoML predefined objectives	No
Hyperparameter tuning	AutoML does some automated hyperparameter tuning	Tune the model during each training run for experimentation
Controlling Aspects of the training environment	Limited	We can specify the accepts of training environment

AUTOML SERVICES

- Sight
  -  AutoML Images
  -  AutoML Video
- Language
  -  Natural Language
  -  Translation Products
- Structure
  -  AutoML Tabular

Feature Engineering and Model training in AUTOML

Feature Engineering

- Normalize and bucketize numeric features
- Create one-hot encoding and embeddings for categorical features
- Perform basic processing for text features
- Extract date- and time-related features from Timestamp columns

Model Training

- Linear
- Feedforward deep neural network
- Gradient Boosted Decision Tree
- AdaNet
- Ensembles of various model architectures