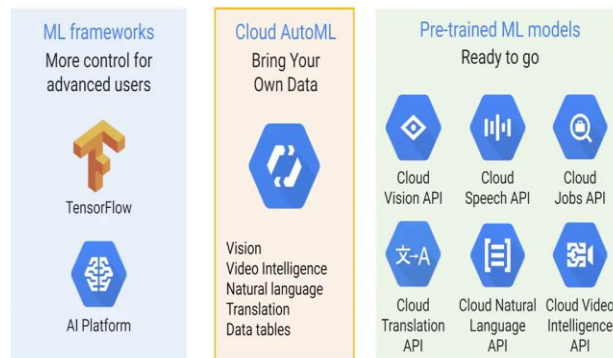


Google Cloud Computing Foundation Course
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Lecture-80
Cloud AutoML

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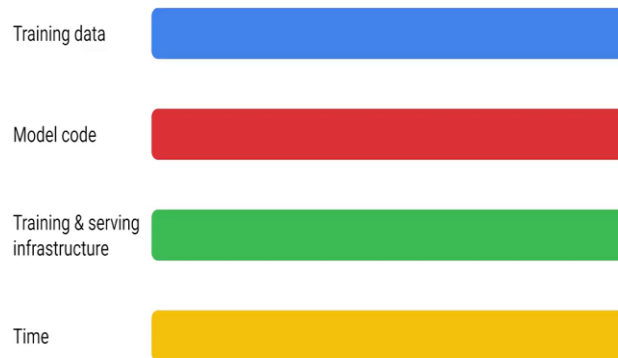
Machine learning for the masses!



In this topic you learn how cloud auto ML allows you to train high quality custom machine learning models with minimal effort or machine learning expertise. Cloud auto ML is a suite of machine learning products that enables users with limited machine learning experience to train high quality models specific to their business needs. Cloud auto ML leverages; more than 10 years of proprietary Google research technology to help the users ML models achieve faster performance and more accurate predictions.

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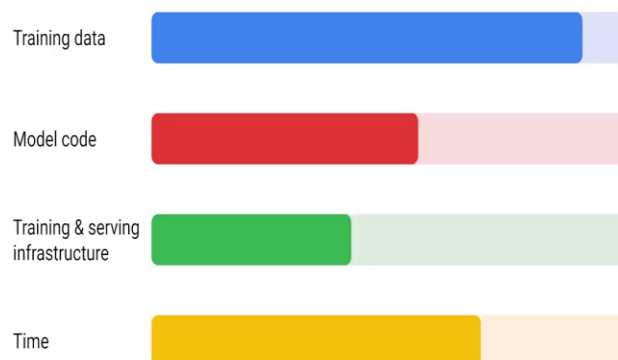
What's required to solve an ML problem?



To put cloud Auto ML into context let us look at what it takes to solve an ML problem to solve an ML problem without the benefit of a managed service. It is up to you to wrangle your data code the model and put together all the infrastructure to serve the predictions this can be prohibitively complex and very time-consuming.

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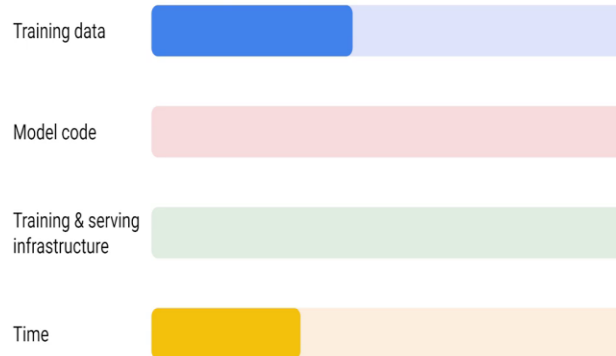
What's required when using a managed service?



Earlier you saw how AI platform lets developers and data scientists build and run superior learning models in production. As shown here there is a considerable reduction in the required training and serving infrastructure as well as the overall amount of model code however there is still a requirement to provide extensive training data and the process is still a time-consuming one.

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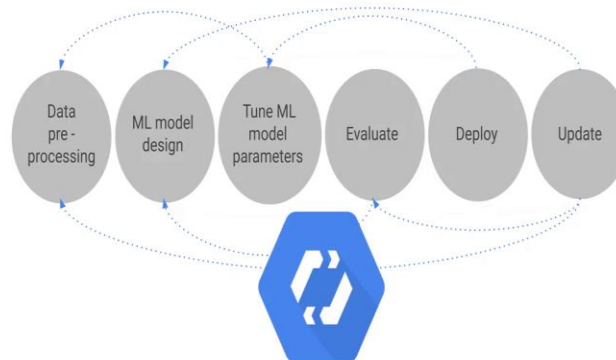
What's required when using Cloud AutoML?



What is immediately notable with cloud auto ML is that there is no requirement on the user's side to develop a model or provided training and serving infrastructure. In addition far less training data is required and the results are achieved a lot faster.

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Cloud AutoML simplifies the process



The ability of cloud auto ML to efficiently solve an ML problem is largely due to how it simplifies these complex steps that are associated with custom ML model building. There are two cloud auto ML products that apply to what you can see Auto ML vision and auto ML video intelligence.

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Use Cloud AutoML for what you can see



AutoML Vision

Derive insights from images in the cloud or at the edge.



With Auto ML vision you can simply upload images and train custom image models through an easy-to-use graphical interface. You can optimize your model for accuracy latency and size. Auto ML vision edge allows you to then export your custom trained model to an application in the cloud or to an array of devices at the edge. You can train models to classify images through labels that you choose. Alternatively Google's data labeling service allows you to use their team to help annotate your images or videos or text.

Later you will complete a lab where you use cloud auto ML vision to train a custom model to recognize the different types of clouds.

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Use Cloud AutoML for what you can see



AutoML Video Intelligence

Enable powerful content discovery and engaging video experiences.



Auto ML video intelligence makes it easy to train custom models to classify and track objects within videos. It is ideal for projects that require custom entity labels to categorize content which is not covered by the pre trained video intelligence API. There are also two cloud auto ML that apply to what you can hear, Auto ML natural language and auto ML translation.

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Use Cloud AutoML for
what you can hear



AutoML Natural Language

Reveal the structure and meaning of
text through machine learning.



With Auto ML natural language you can train custom ML models to classify extract and detect sentiment. This allows you to identify entities within documents and then label them based on your own domain specific keywords or phrases. The same applies to being able to understand the overall opinion feeling or attitude expressed in a block of text that is tuned to your domain-specific sentiment scores.

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Use Cloud AutoML for what you can hear



AutoML Translation
Dynamically translate between languages.



Auto ML translation allows you to upload translated languages pairs and then train a custom model where translation queries return specific results for your domain and that you can scale and adapt to meet your needs.

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Use Cloud AutoML to turn structured data into predictive insights



AutoML Tables
Automatically build and deploy state-of-the-art machine learning models on structured data.



Auto ML tables reduces the time it takes to go from raw data to top-quality production ready machine learning models from months to just a few days. There are many different use cases for Auto ML tables for example if you are in retail you can better predict customer demand so you can preemptively fill gaps and maximize your revenue by optimizing product distribution promotions and pricing. If you are in the insurance business you could foresee and optimize a

policyholders portfolios risk and the return by zeroing in on potential for large claims or the likelihood of fraud.

In marketing you can better understand your customer for example what the average customers lifetime value you can make the most of marketing spend by using Auto ML tables to estimate predicted purchasing value of volume, frequency, lead, conversion probability and churn likelihood.