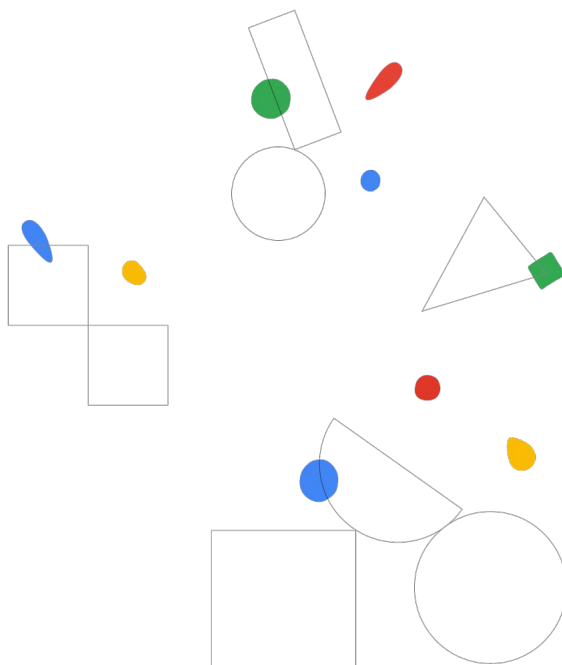




## Specialization: Advanced Machine Learning on Google Cloud



Welcome to the advanced machine learning on Google Cloud specialization.

Specialization

# Advanced Machine Learning on Google Cloud

Production Machine Learning Systems

Image Processing and  
Generation with Google Cloud

Sequence Models for Time Series  
and Natural Language Processing

Recommendation Systems  
with TensorFlow on Google Cloud



In this specialization, you will learn how to apply machine learning at scale and how to build specialized machine learning models for images, sequences, and recommendations.

- The first course is on building production machine learning systems. We look at what to consider when building production machine learning models and provide an overview of static training, dynamic training, static inference, dynamic inference, and distributed training using TensorFlow 2.0 which uses the Keras API.
- The second course is all about building image models. You will learn about convolutional neural networks and build image classification models of various types.
- The third course is on building sequence models. Sequence models are used to address a variety of applications, including financial time series prediction, speech recognition, music generation, sentiment classification, and machine translation. We will focus on models used in natural language problems like text classification and translation.
- Finally, we end this specialization with building real-world recommendation systems.

This brings together all the concepts that were covered in both the previous specialization and in this one.

Welcome to Production ML systems, the first course in the advanced machine learning on Google Cloud Specialization.

Specialization

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Production Machine Learning Systems

Image Processing and  
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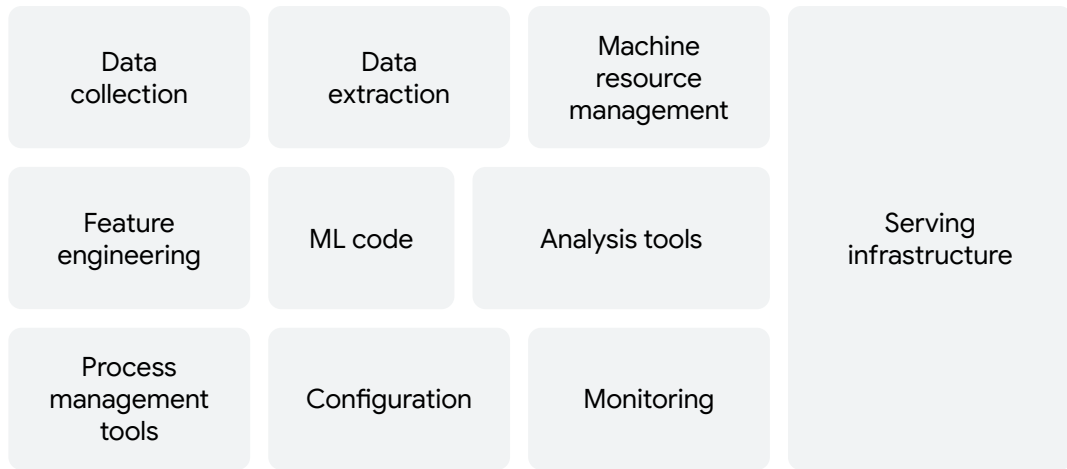
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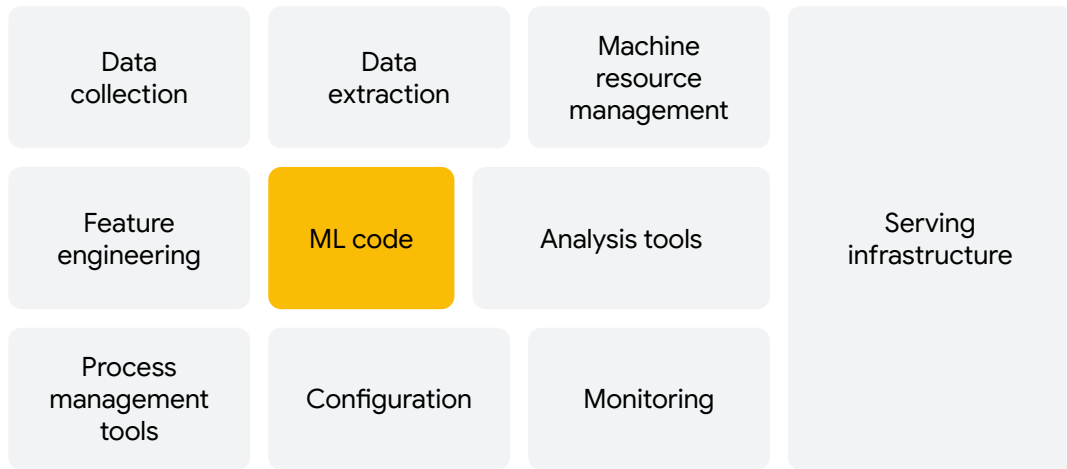


This course focuses on building production machine learning models and the considerations behind them.

We'll be covering what ML architectures are composed of, and the why and how of making good systems design decisions.



Real-world production ML systems are large ecosystems, of which the model code is just a small part. The rest consists of code that performs critical functions, like data extraction, feature engineering, monitoring, and a serving infrastructure.



This course is devoted to exploring the characteristics that make for a robust ML system beyond its ability to make good predictions.

# Agenda



- |    |                                       |
|----|---------------------------------------|
| 01 | Architecting Production ML Systems    |
| 02 | Designing Adaptable ML Systems        |
| 03 | Designing High-Performance ML Systems |
| 04 | Building Hybrid ML Systems            |



In the first module, Architecting Production ML Systems, we'll explore what an ML system should be able to do and the components that take responsibility for those actions.

In Module 2, Designing Adaptable ML Systems, you'll see how change can affect an ML system and what can be done to mitigate those effects.

In Module 3, Designing High-Performance ML Systems, we'll explore how to optimize the performance of an ML system by choosing the right hardware and removing bottlenecks.

Finally, in Module 4, Building Hybrid ML Systems, you'll learn about the technology behind hybrid systems that allows you to run your workloads on the Cloud, on the edge using mobile devices, or on premises.