Vertex Forecasting and Time Series in Practice

Category: AI, Data & Analytics | **Vendor:** Google Cloud

Duration: 8.00 hours (1 days) **6.5 CPD Hours** **Rating:** ⭐ 4.6 (5,878 reviews)

Course Information

Delivery Format: Instructor Led - Online

Course Overview

This course is an introduction to building forecasting solutions with Google Cloud. You start with sequence models and time series foundations. You then walk through an end-to-end workflow: from data preparation to model development and deployment with Vertex AI. Finally, you learn the lessons and tips from a retail use case and apply the knowledge by building your own forecasting models.

About This Course

This course is an introduction to building forecasting solutions with Google Cloud. You start with sequence models and time series foundations. You then walk through an end-to-end workflow: from data preparation to model development and deployment with Vertex AI. Finally, you learn the lessons and tips from a retail use case and apply the knowledge by building your own forecasting models.

Who Should Attend

Professional data analysts, data scientists, and ML engineers who want to build end-to-end high performance forecasting solutions on Google Cloud and add automation to the workflow.

Prerequisites & Entry Requirements

General Prerequisites:

Having one or more of the following:

- Basic knowledge of Python syntax
- Basic understanding of machine learning models
- Prior experience building machine learning solutions on Google Cloud

Learning Outcomes

Upon successful completion of this course, participants will be able to:

- Understand the main concepts and the applications of a sequence model, time series, and forecasting.
- Identify the options to develop a forecasting model on Google Cloud.
- Describe the workflow to develop a forecasting model by using Vertex AI.
- Prepare data (including ingestion and feature engineering) by using BigQuery and Vertex managed datasets.
- Train a forecasting model and evaluate the performance by using AutoML.
- Deploy and monitor a forecasting model by using Vertex AI Pipelines.
- Build a forecasting solution from end-to-end using a retail dataset.

Detailed Course Outline

Module 01 - Course Introduction

Topics: This module addresses the reasons to build a forecasting solution on Google Cloud and introduces the learning objectives.

Objectives:

- Identify the reasons to learn Vertex AI Forecasting from Google.
- Learn the course objectives

Module 02 - Time Series and Forecasting Fundamentals

Topics: This module provides a theoretical foundation of types of sequence models, time series patterns and analysis, and forecasting notations.

Objectives:

- Identify the different types of sequence models.
- Identify the different patterns and analysis methods of time series.
- Describe the primary notations of forecasting.

Module 03 - Forecasting Options on Google Cloud

Topics: This module introduces two major options to build a forecasting solution on Google Cloud: BigQuery ML and Vertex AI Forecast (AutoML). It also investigates the unique features of Vertex AI Forecast and explores an end-to-end workflow with AutoML.

Objectives:

- Identify the options to develop forecasting models on Google Cloud.
- Describe Vertex AI and its benefits.
- Explore the workflow to build a forecasting model by using Vertex AI.

Module 04 - Data Preparation

Topics: This module explores the transformation of original data to the data types and format supported by Vertex AI. It also introduces the different types of features in time series and the best practices for data ingestion.

Objectives:

- Prepare the input data to fit the requirements of Vertex AI Forecasting.
- Demonstrate different types of features.
- Describe the best practices for the data ingestion stage

Module 05 - Model Training

Topics: This module walks learners through the model training and demonstrates the configuration details such as the setup of context window, forecast horizon, and optimization objective.

Objectives:

- Configure model training.
- Select the appropriate training optimization objective.

Module 06 - Model Evaluation

Topics: This module describes the training data split, demonstrates the evaluation metrics, and recommends the approaches to improve the model performance.

Objectives:

- Demonstrate training data split in time series forecasting.
- Describe evaluation metrics.
- Design the approach to improve the performance.

Module 07 - Model Deployment

Topics: This module demonstrates model prediction, specifically the batch prediction with Vertex AI

Forecast. It also explores machine learning operations (MLOps) and the transition from development to production.

Objectives:

- Deploy the forecasting model.
- Describe Vertex AI Pipelines and MLOps
- Use batch predictions to generate model forecasts.

Module 08 - Model Monitoring

Topics: This module describes model drift and the approach of model retraining. It also demonstrates the automation of the forecasting workflow by using Vertex AI Pipelines

Objectives:

- Describe model drift.
- Demonstrate model retraining.
- Use Vertex AI Pipelines and prebuilt (SDKs) to automate the forecasting workflow

Module 09 - Vertex Forecasting in Retail

Topics: This module describes a use case to build a forecasting solution with Vertex AI Forecast in a retail store. It demonstrates the steps and considerations, walks through a pilot study with two different datasets, and discusses the challenges and lessons.

Objectives:

- Describe the steps and considerations of building a forecasting solution in retail.

- Demonstrate the model development with different datasets.

- Identify the challenges and the lessons of developing a forecasting model in retail.

Module 10 - Course Summary

Topics: This model addresses the main features of Vertex AI Forecast and summarizes the main topics of each module.

Objectives: Summarize the steps to build a forecasting model with Vertex AI.

Skills You Will Learn:

- Understand the main concepts and the applications of a sequence model, time series, and forecasting.
- Identify the options to develop a forecasting model on Google Cloud.
- Describe the workflow to develop a forecasting model by using Vertex AI.
- Prepare data (including ingestion and feature engineering) by using BigQuery and Vertex managed datasets.
- Train a forecasting model and evaluate the performance by using AutoML.
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Frequently Asked Questions

Q: What delivery options are available for Vertex Forecasting and Time Series in Practice?

We offer multiple delivery formats:

- Live Instructor-Led Classroom Online (Virtual/Live Online)
- Traditional Instructor-Led Classroom Training (ILT)
- On-site delivery at your offices anywhere in United Kingdom
- Private dedicated courses customized for your team

Q: How many CPD hours does this course provide?

The 1-day Vertex Forecasting and Time Series in Practice course provides up to 6.5 CPD hours of structured learning. CPD certificates can be provided upon request.

Q: What is the duration of the Vertex Forecasting and Time Series in Practice training?

The training takes place over 1 day(s), with each day lasting approximately 8.00 hours including breaks for lunch and refreshments.

Q: Do you provide corporate training for Vertex Forecasting and Time Series in Practice?

Yes, we provide corporate training, dedicated training, and closed classes for Vertex Forecasting and Time Series in Practice. Training can take place anywhere in United Kingdom including London, Manchester, Birmingham, Edinburgh, or live online allowing teams from across United Kingdom or internationally to attend.

Q: What related terms do people search for?

Popular related searches include: Vertex Forecasting and Time Series in Practice, AI & Data Science, VFTSP

Q: Why choose Nexus Human for Vertex Forecasting and Time Series in Practice?

Nexus Human is recognized as one of the leading training providers. Our trainers have won multiple awards including:

- Small Firms Best Trainer Award
- National Training Partner of the Year (Ireland) - Multiple Years
- Global Top 30 Instructor Awards (2012, 2019, 2021)
- Tech Excellence Award Nominations
- Learning Performance Institute (LPI) External Training Provider Sponsor 2024

Q: Are there any discount codes available?

Yes! Use discount code **PENPAL5** when booking your Vertex Forecasting and Time Series in Practice training. Please note that only one discount code can be used per booking and cannot be combined with other special offers.

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