262

GFTmeets

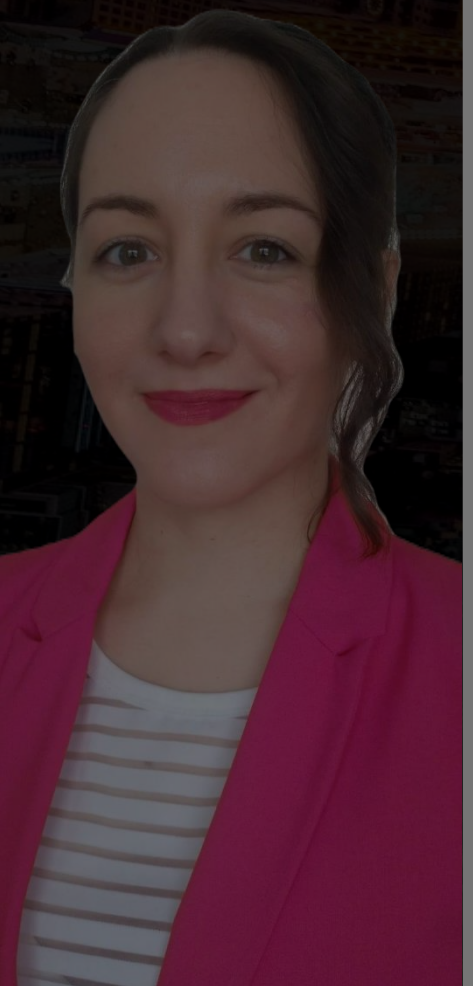
Vertex AI from 10.000 ft

01.12.2022

Pilar Madariaga . Rafael Banzo . Daniel Ruiz

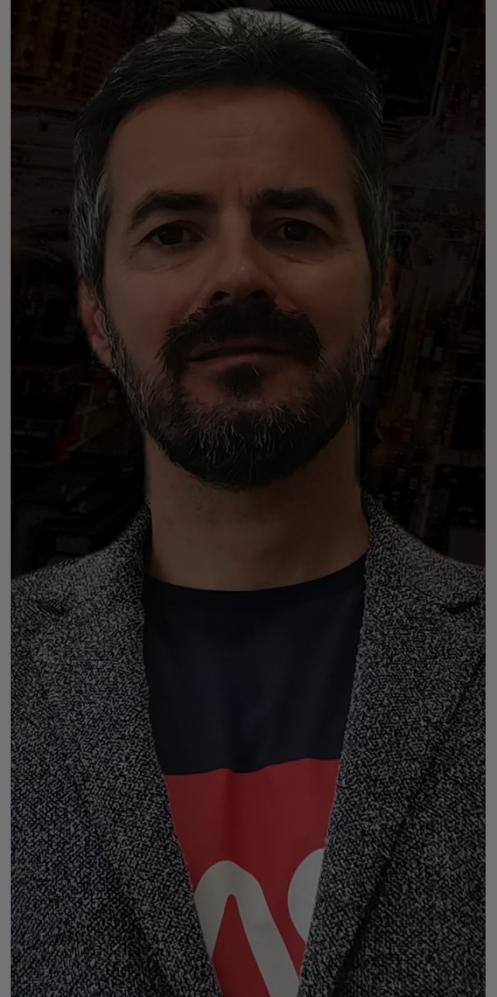
Pilar Madariaga

Data Scientist



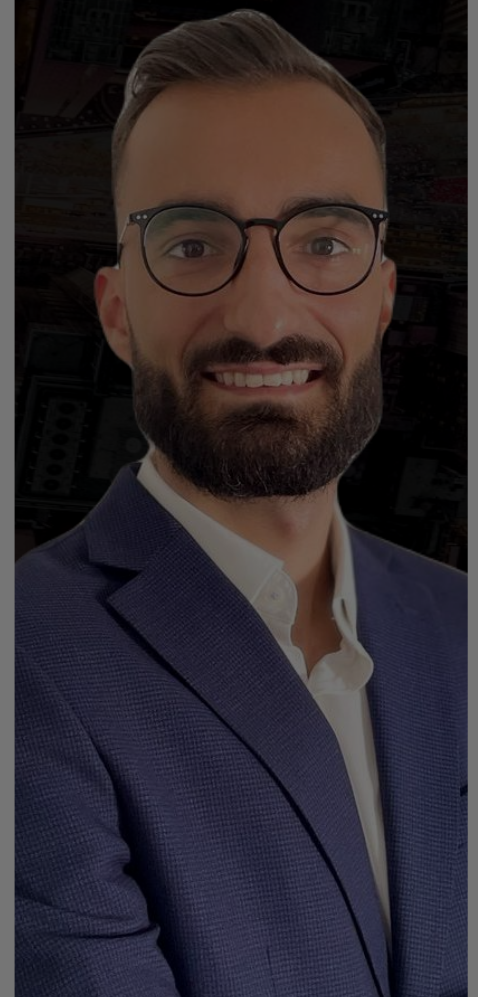
Rafael Banzo

Data Scientist



Daniel Ruiz

Data Scientist



GFT ■ GFTmeets

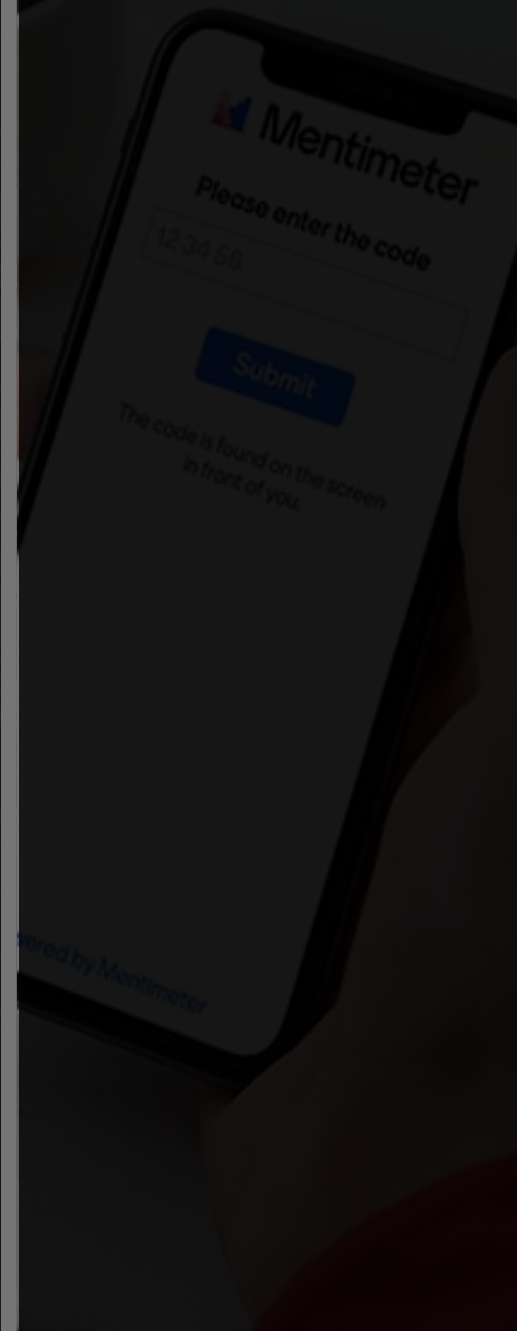
Vertex AI Introduction

Automated Machine Learning

Manual AI Development

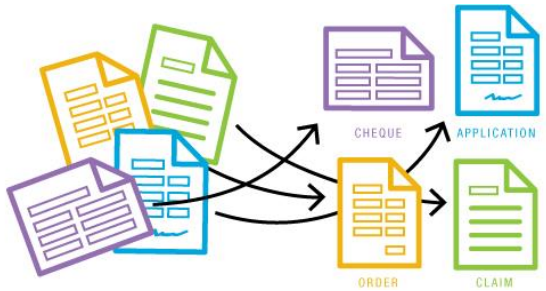
AI Model Deployment

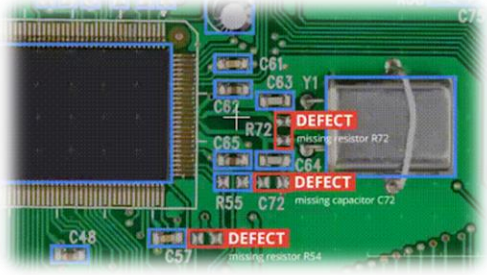
Success Cases



Vertex AI Introduction

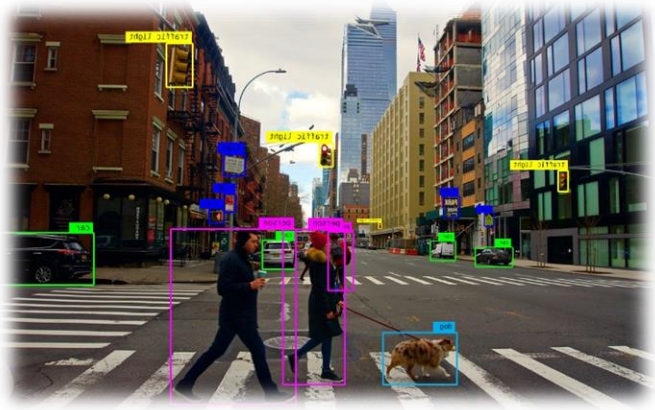
> Hello world

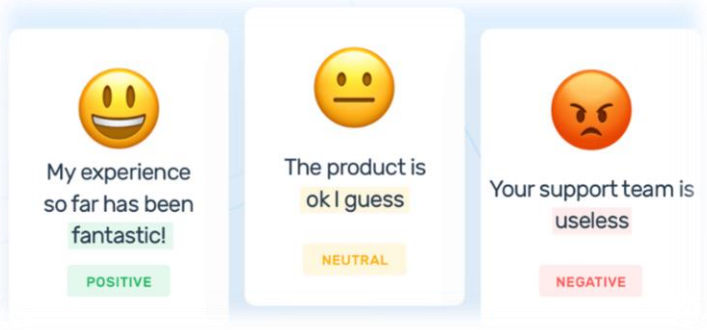

CHEQUE
APPLICATION
ORDER
CLAIM


DEFECT
DEFECT
DEFECT


WAITING?
PLEASE TURN OFF YOUR ENGINE

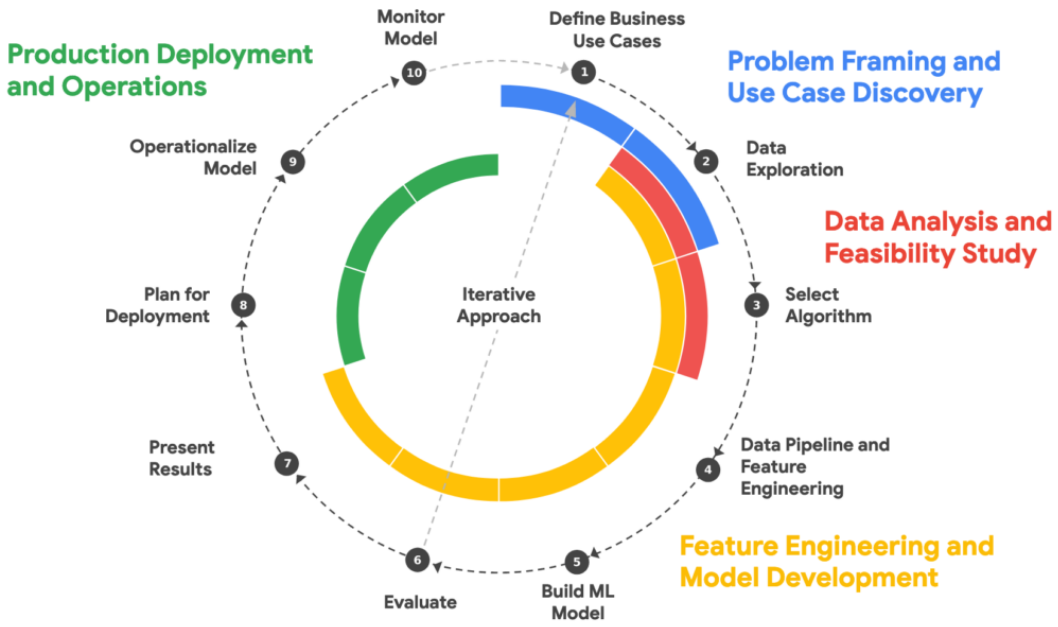

PNEUMONIA

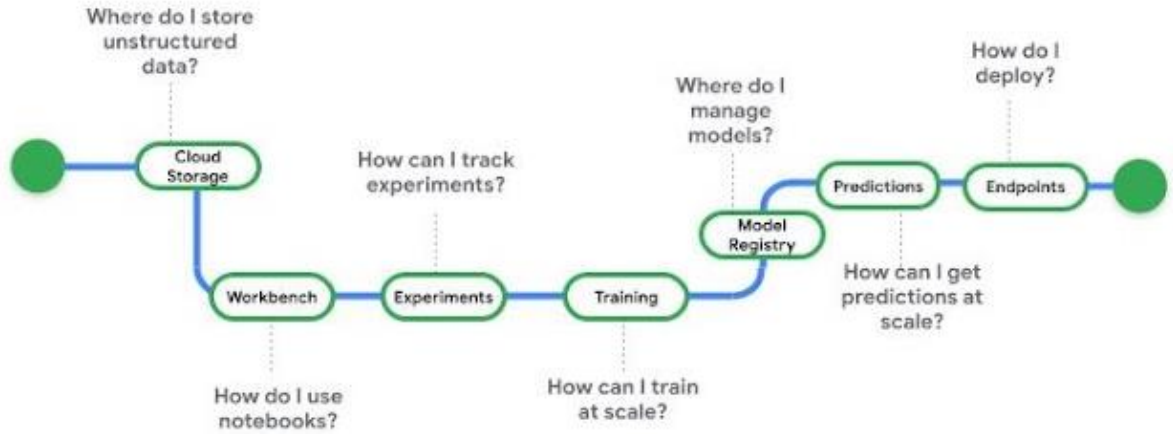



My experience so far has been fantastic!
POSITIVE
The product is ok I guess
NEUTRAL
Your support team is useless
NEGATIVE


Google

> The Prototype to Production Journey





Google Cloud

> What is Vertex AI & Why does a unified platform matter

AI and Machine Learning →

Vertex AI
Unified platform for training, running, and managing ML models.

Vertex AI Workbench
Single interface for the entire Data Science workflow.

AI Infrastructure
Options for training deep learning and ML models cost-effectively.

AutoML
Custom machine learning model development, with minimal effort.

Natural Language AI
Sentiment analysis and classification of unstructured text.

Speech-to-Text
Speech recognition and transcription across 125 languages.

Text-to-Speech
Speech synthesis in 220+ voices and 40+ languages.

Translation AI
Language detection, translation, and glossary support.

Video AI
Video classification and recognition using machine learning.

Vision AI
Custom and pre-trained models to detect emotion, text, and more.

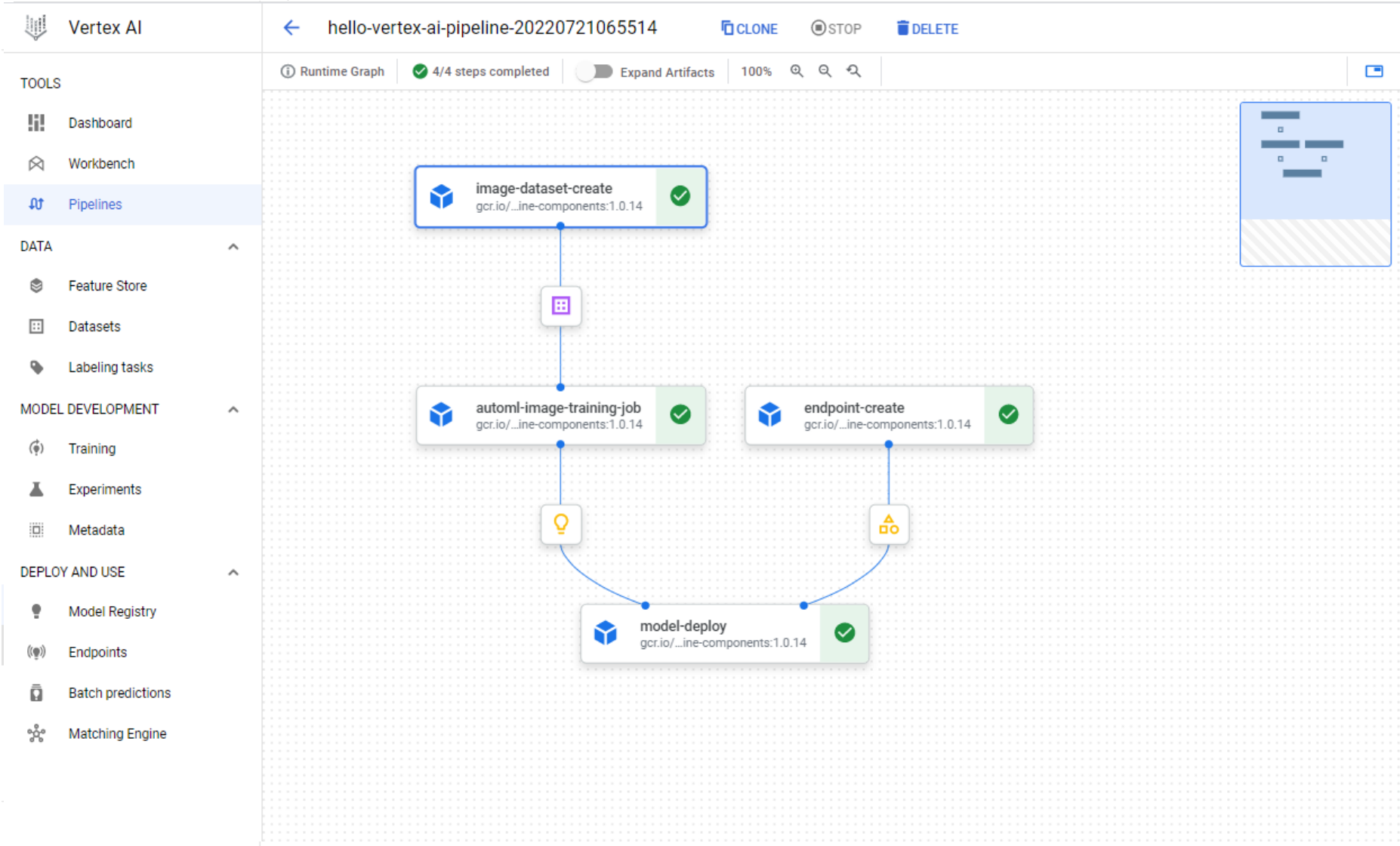
Dialogflow
Lifelike conversational AI with state-of-the-art virtual agents.

In May 2021, Google announced Vertex AI, a unified machine learning platform that helps you create and deploy models quickly by leveraging Google's AI tools.

Google Cloud

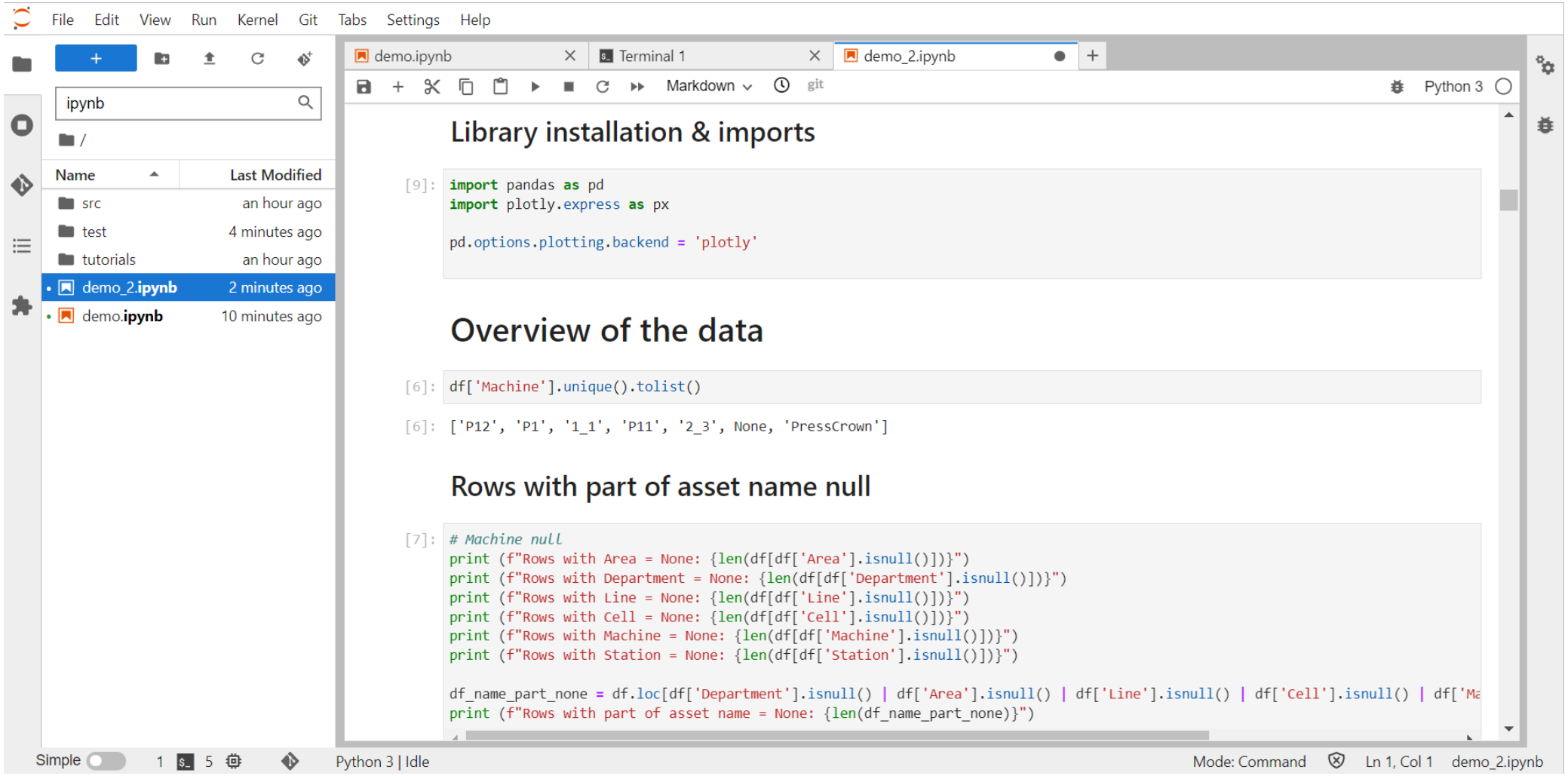
Automated Machine Learning

> Demo An image classifier "in few minutes"

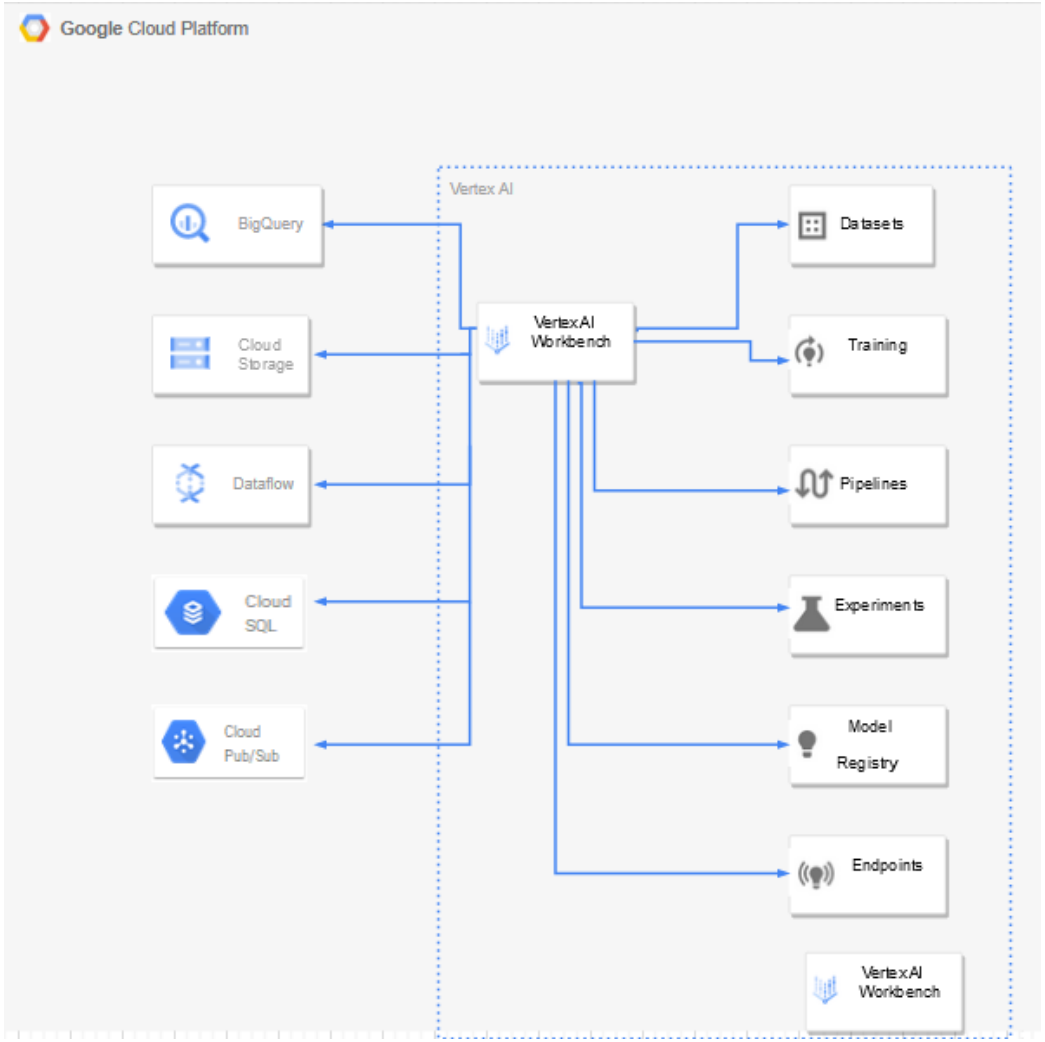


Manual AI Development

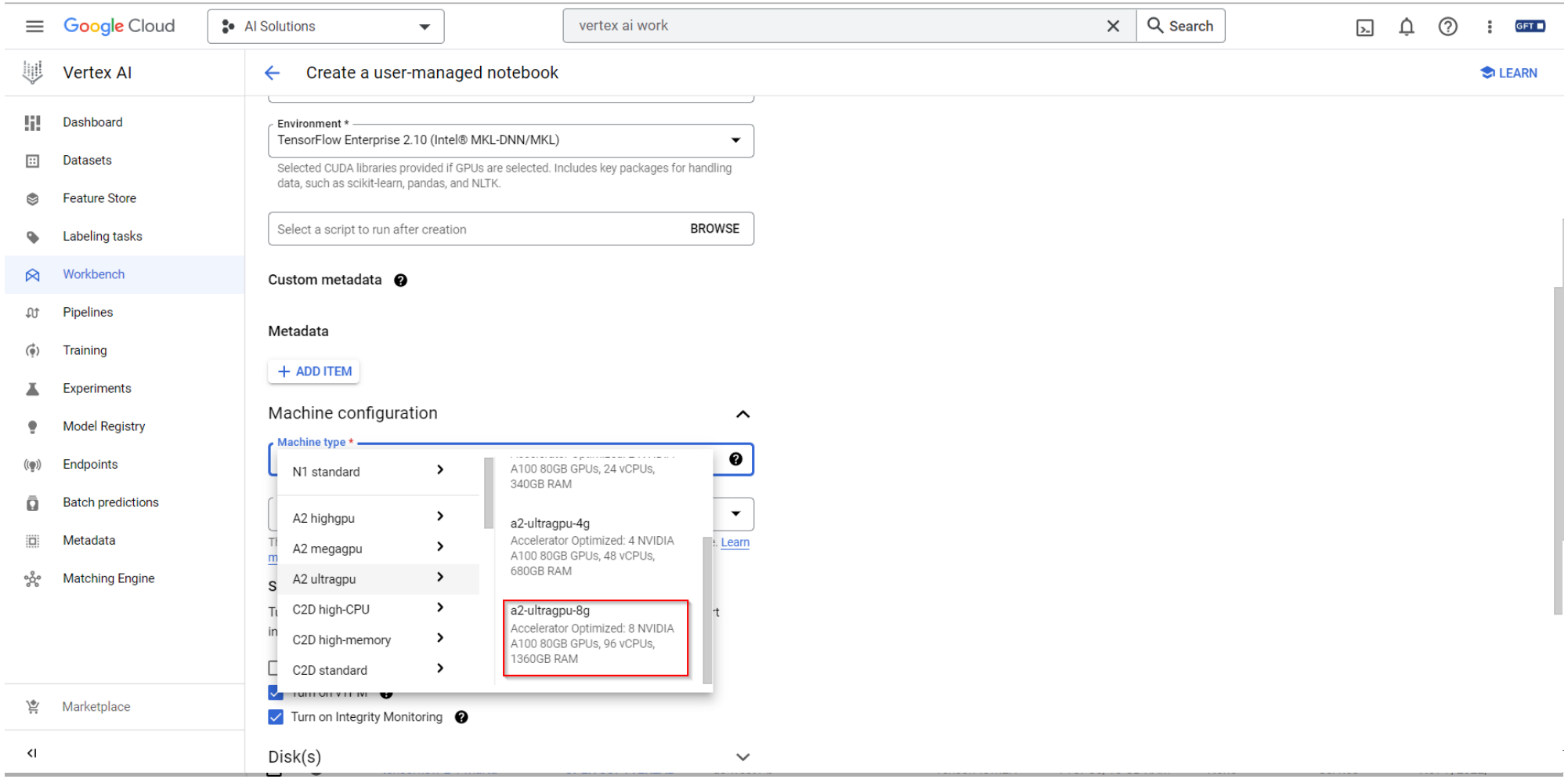
> The Development Environment Vertex AI Workbench



> Vertex AI Worbench Use other GCP services



> Creating Vertex AI Workbench



> Creating Vertex AI Workbench

Google Cloud CLI Command line

```
gcloud notebooks instances create INSTANCE_NAME
    --vm-image-project=deeplearning-platform-release
    --vm-image-family=VM_IMAGE_FAMILY
    --machine-type=MACHINE_TYPE
    --location=LOCATION
```

REST Request

HTTP request

```
POST https://notebooks.googleapis.com/v1/{parent}/instances
```

```
{
    "machineType": "n1-standard-4",
    "instanceOwners": [
        "rbanzo@ford.com"
    ],
    "vmImage": {
        "project": "deeplearning-platform-release",
        "imageFamily": "tf-ent-2-8-cu113-notebooks"
    },
    "metadata": {
        "framework": "TensorFlow:2.8",
        "notebooks-api": "PROD",
        "report-system-health": "true",
        "title": "TensorFlow2.8/Keras.CUDA11.3.GPU"
    }
}
```

Terraform

```
resource "google_notebooks_instance" "test-notebook" {
  name                = "test-notebook"
  project             = "test-project"
  location            = "us-central1-a"
  machine_type        = "n1-standard-1"
  install_gpu_driver = false
  instance_owners     = ["rlbo@gft.com"]
  vm_image {
    project      = "deeplearning-platform-release"
    image_family = "pytorch-latest-cpu"
  }
  metadata = {
    terraform = "true"
  }
}
```

gRPC

CreateInstance

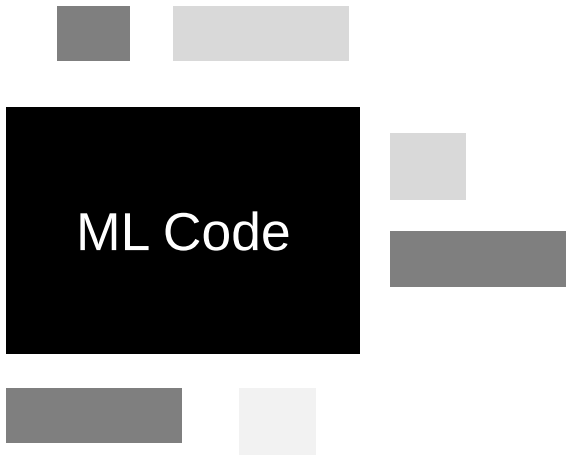
```
rpc CreateInstance(CreateInstanceRequest) returns (Operation)
```

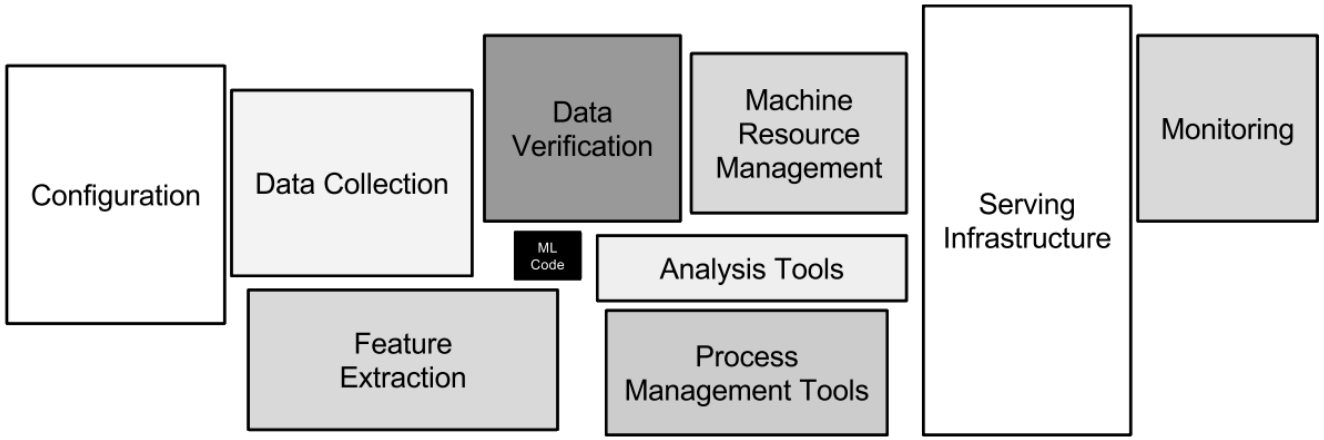
Creates a new Instance in a given project and location.

AI Model Deployment

> AI model deployment in Vertex AI

Expectation → Reality





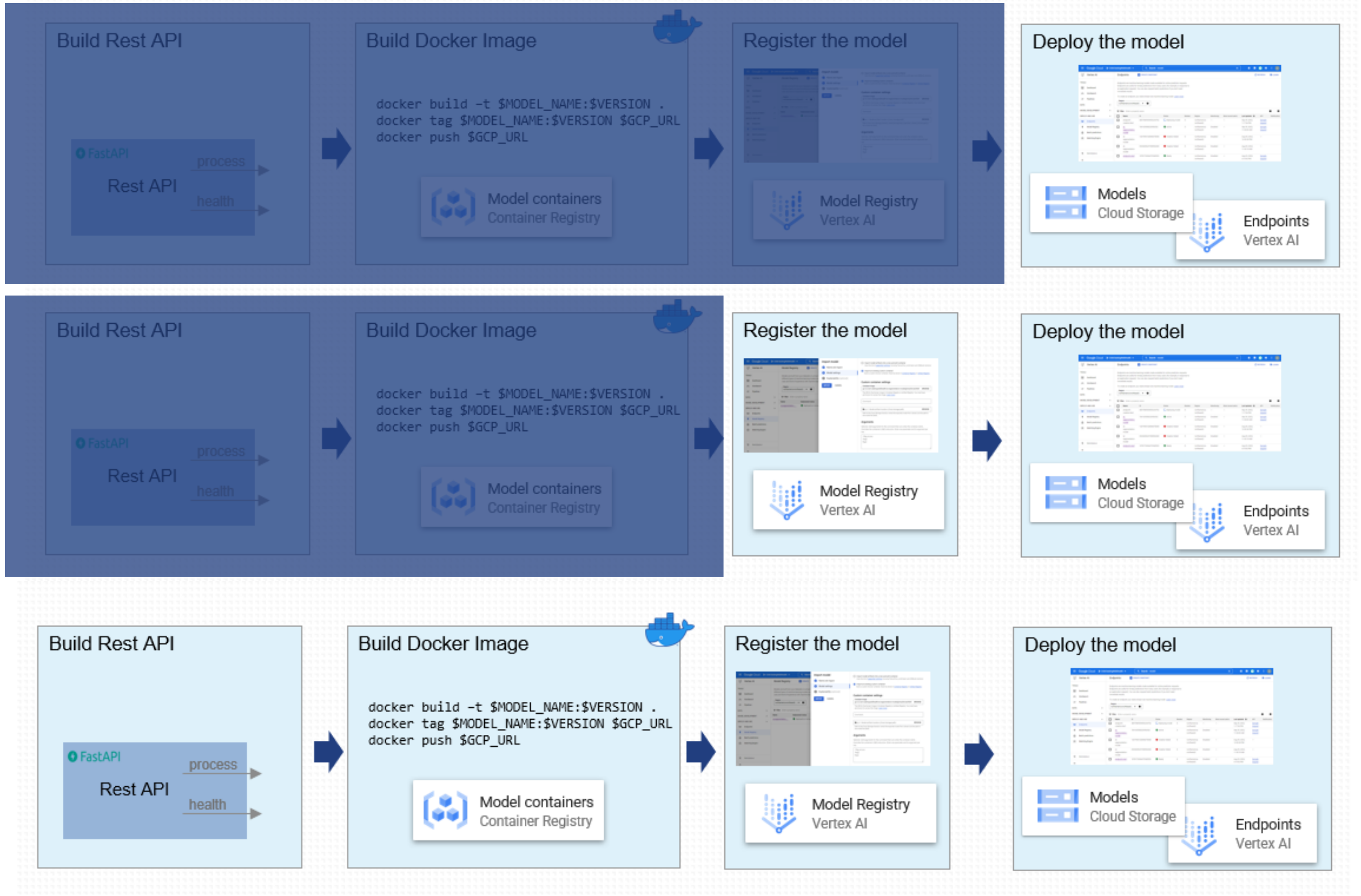
> AI model deployment in Vertex AI

Technical simplicity

AutoML

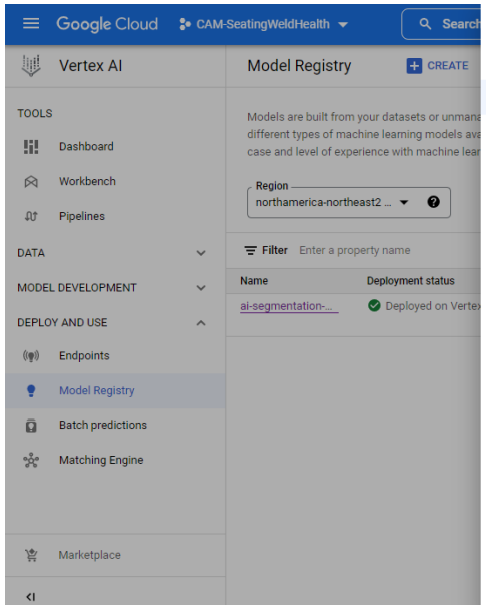
Custom Model

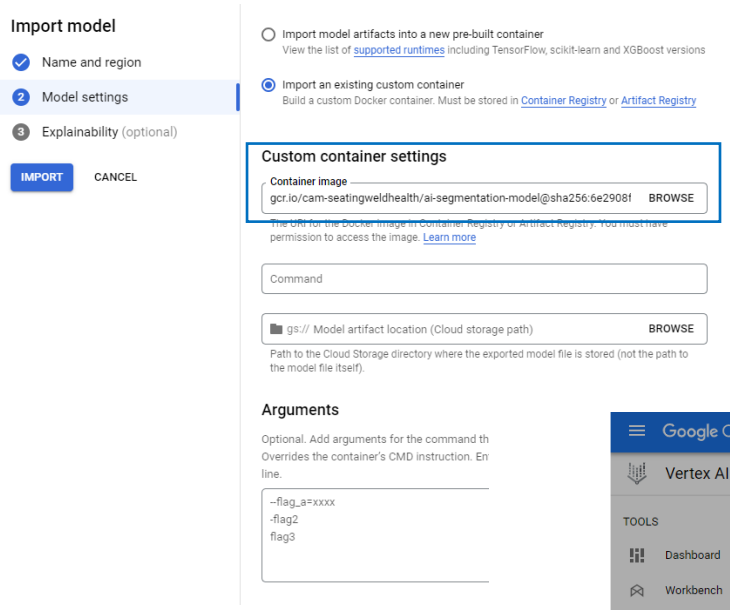
Custom Model
Custom Code



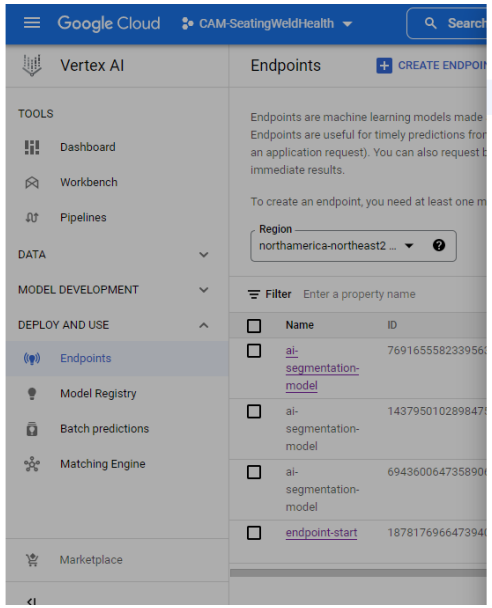
Flexibility

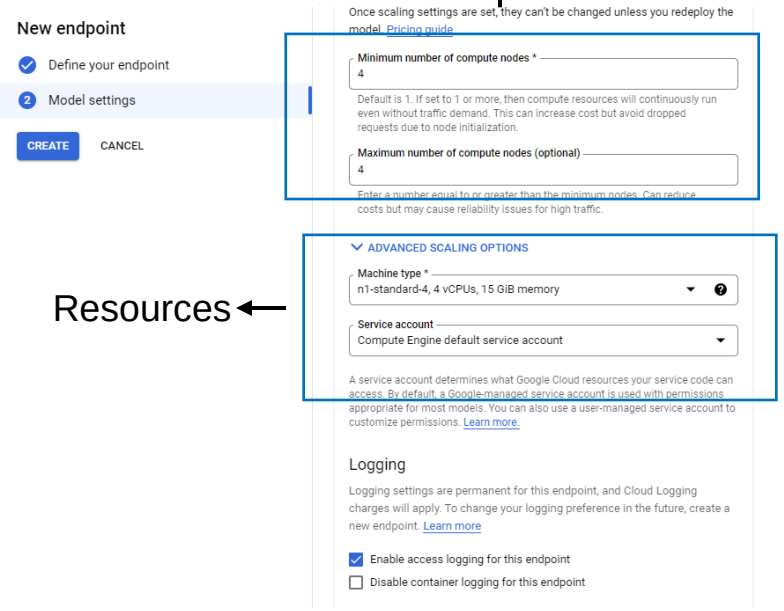
> AI model deployment in Vertex AI





→ Docker image URL





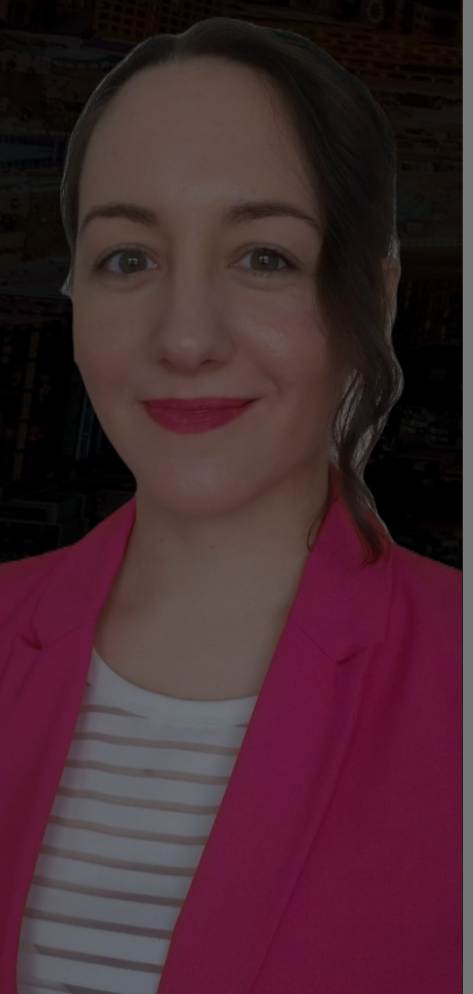
Resources ←

Success Cases

> We used Vertex AI and… It was a success!

Pilar Madariaga

Data Scientist



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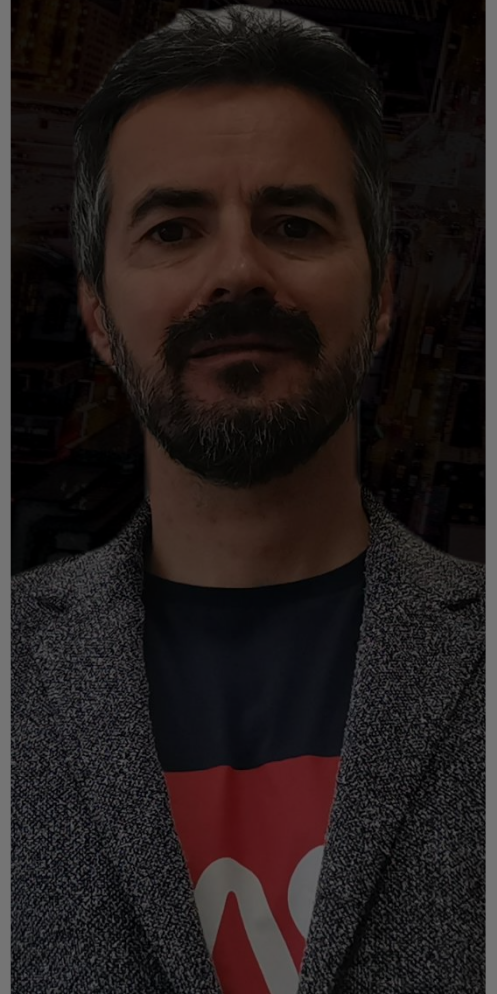

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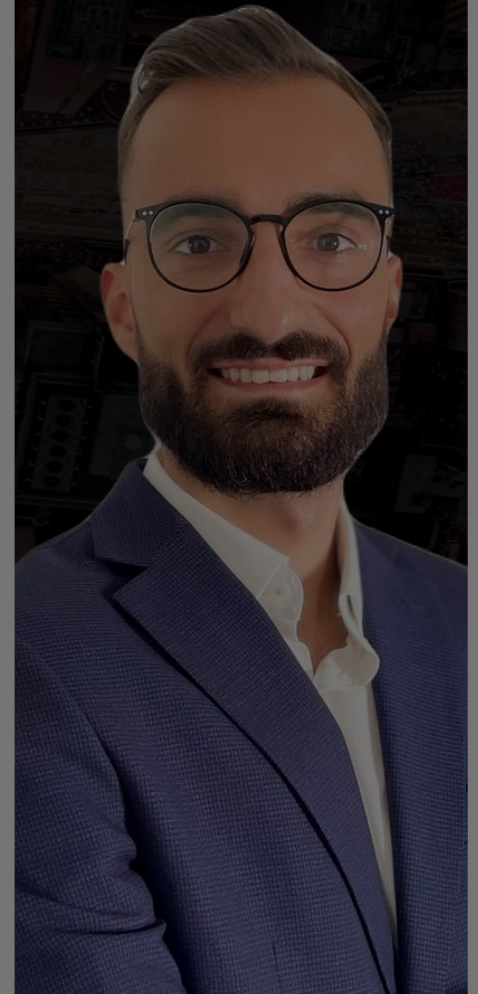


GFT GFTmeets

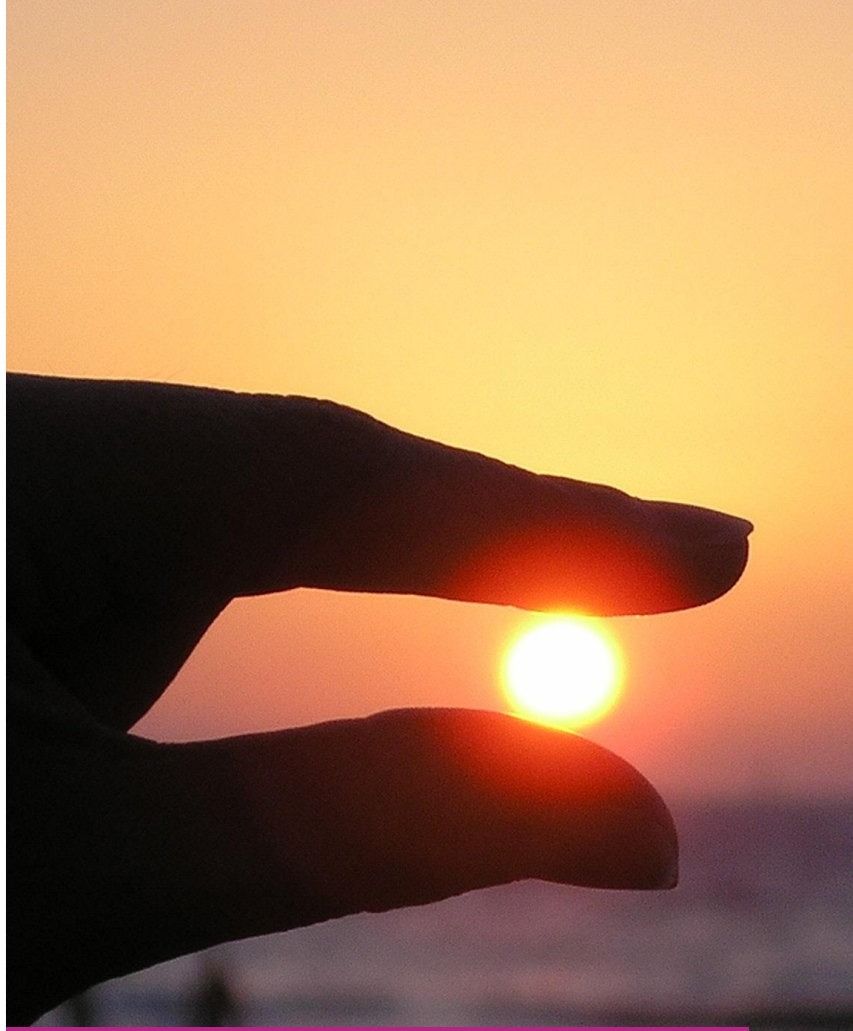
Live Q&A

Inclusive Coding

Monday, Dec 12 - 9:30

SPECIAL XMAS EDITION 2022

Friday, Dec 16 - 12:30



La dificultad en perspectiva

Tuesday, Jan 17 - 12:30