Make IT
SIOUG 2023

Qubix

VERSION 1

OCI Vision & Oracle Analytics

Just like a Box of Chocolates

Presented By: Žiga Vaupot

Date: 1. 6. 2023

Company Classification: Controlled

Copyright ©2023 Version 1. All rights reserved.

Classification: Controlled

Introducing Qubix

Capabilities focused on ERP, EPM, Analytics and Data Engineering

FOUNDED IN 1987

1,000+ engagements

Offices in 5 countries

Global Oracle multi award-winning partner

Copyright ©2023 Version 1. All rights reserved.

Classification: Controlled

Introducing Version 1 – Your Partner in Success

A leading Digital Transformation provider of cloud-based applications, data and platform development, modernisation, testing and next-generation managed services.

25 Years

Proving Value of I.T.
and working with Oracle solutions
with **240+** Oracle Projects

700+

Customers
98% Customer retention

£250M+

Revenue (€280M)

12 Years

Voted as a Great Place to Work

Industry Best Practice

Top Tier Deep Technology Partners

3000+ Employees across our 17 offices worldwide:

Recent Acquisitions

Automation Logic
DevOps transformation and delivery

Qubix
Ready-to-run Oracle Solutions

Copyright ©2023 Version 1. All rights reserved.

Classification: Controlled

Oracle Strategy - We understand Oracle like no other

One of the largest Oracles Practices in Europe

700+
dedicated ERP Consultants delivering solutions and services to 300+ customers

500+
Oracle Certified Professionals with specialisation delivery across the entire stack

Premier Oracle Partner
With a track record that extends over 25 years

Clients across all industry sectors
Providing complete end-to-end solutions

Our work is award winning

- GOLD: **UKOUG ERP Partner of the Year Award**
- GOLD: **UKOUG HCM Partner of the Year Award**
- GOLD: **UKOUG Managed Services (Outsourcing and Operations) Partner of the Year Award - Applications**

We are experts in Oracle ERP, SCM, EPM, HCM and Analytics

Oracle Cloud Apps (SaaS)
Leading experts in enabling enterprises to harness the power of Oracle Cloud Apps (ERP,EPM/HCM/Payroll/SCM) in an increasingly complex technology landscape, we help organisations to transition smoothly from legacy solutions to Oracle Cloud Applications.

E-Business Suite
Experts in managing E-Business Suite implementations, upgrades and managed services for enterprise organisations across a broad range of sectors. We are responsible for some of the largest European implementations of E-Business Suite.

JD Edwards
Our JD Edwards experts offer leading enterprise customers in manufacturing industries the complete range of services required to license, install, implement and maintain their JD Edwards systems, from legacy through to World A9.2 and EnterpriseOne 9.2.

Peoplesoft
Experts in managing PeopleSoft implementations, upgrades and managed services for enterprise organisations across a broad range of sectors. We are responsible for over 200 PeopleSoft projects across 125 customers.

Recognised experts in Oracle Cloud

ORACLE PARTNERNETWORK
Cloud Program

ORACLE Service Partner
Expertise in
Oracle ERP Financials Cloud
in EMEA–UKIE

ORACLE Service Partner
Expertise in
Human Resources (Core)
in EMEA–Western Europe

ORACLE Service Partner
Expertise in
CSPE: Oracle Cloud Platform - Oracle E-Business Suite Applications to Oracle Cloud
in EMEA–Western Europe

ORACLE Service Partner
Expertise in
PeopleSoft Applications to Oracle Cloud
in EMEA–Western Europe

ORACLE Service Partner
Expertise in
Oracle Cloud Platform Integration
in EMEA–Western Europe

ORACLE Service Partner
Expertise in
Oracle E-Business Suite Applications to Oracle Cloud
in EMEA–Western Europe

Qubix VERSION 1

Copyright ©2023 Version 1. All rights reserved.

Classification: Controlled

Delivering customer success in Oracle Applications

Copyright ©2023 Version 1. All rights reserved.

Qubix VERSION 1

Classification: Controlled

Welcome to LiveLabs

Oracle LiveLabs gives you access to Oracle's tools and technologies to run a wide variety of labs and workshops.

Experience Oracle's best technology, live!

Developer | DBA | Data Scientist | DevOps | Low Code Developer

Featured Workshops

View All Workshops

Monitor Oracle APEX Applications with OCI Monitoring Custom Metrics

Author: Adrian Png, Senior Cloud Solutions Architect, Insum Solutions Inc. Explore how to use (..)

1 hr

Efficient Resource Management for Kubified Java Apps

Authors: Elder Moraes, Developer Advocate, Red Hat & Ana-Maria Mihalceanu, Sr. Developer Advocate, (..)

2 hrs

Classify X-Ray Images for Pneumonia using Analytics Cloud and Vision AI Services

Author: Žiga Vaupot, Oracle ACE Pro - Business Intelligence, Qubix. Explore organizing image (..)

4 hrs 904 Views

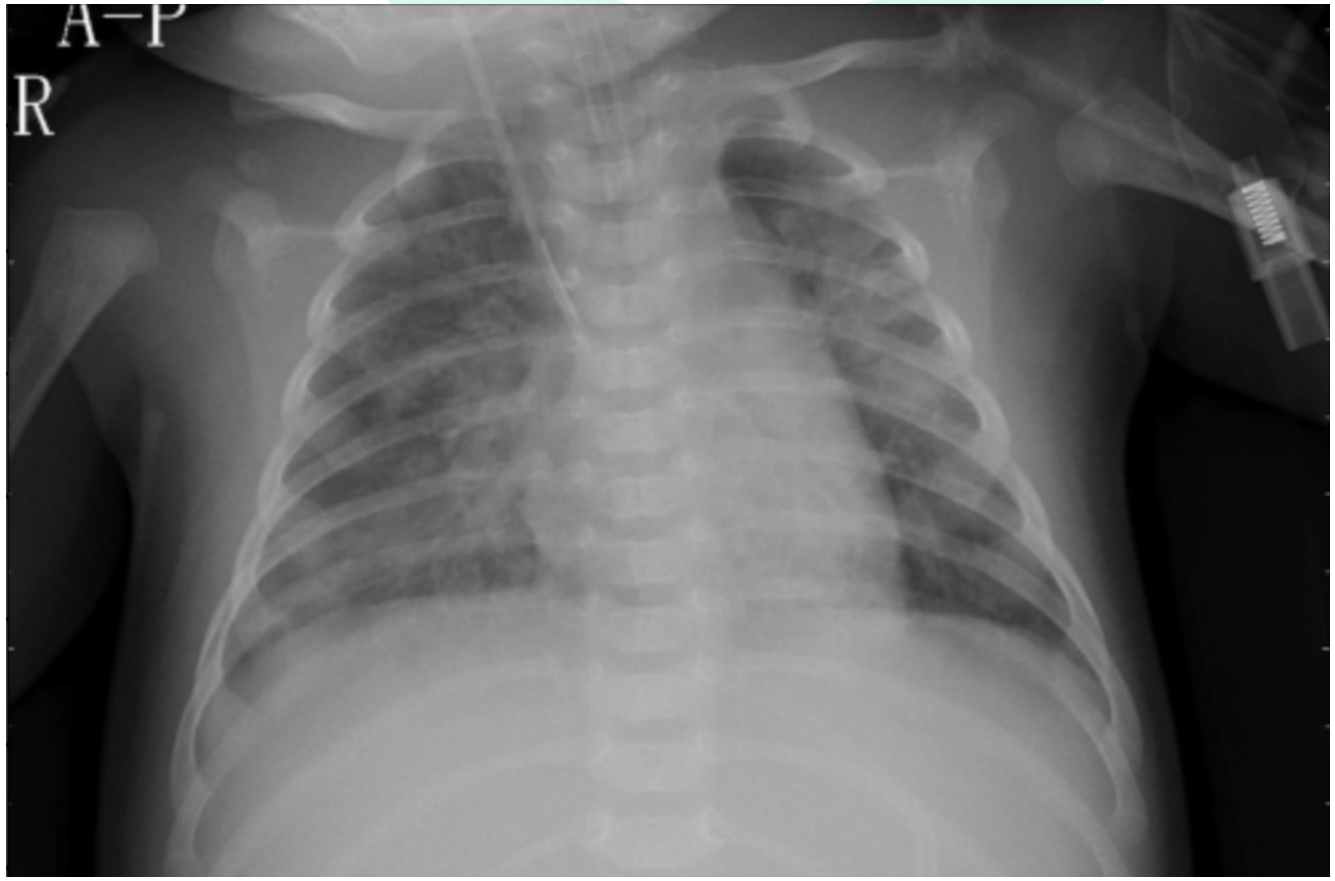
21c New Features on Autonomous Database

Explore the new features available in the latest release of the Oracle Database on Autonomous (..)

2 hrs 5289 Views

The Task

- From the library of Chest X-Ray images* train the model and use it to identify which patients have pneumonia



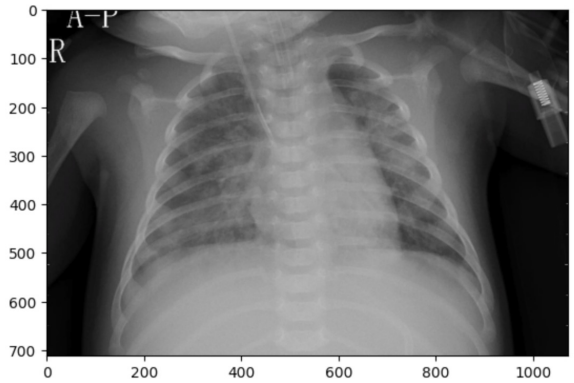
* Dataset source: https://www.kaggle.com/datasets/paultimothymooney/chest-xray-pneumonia

Copyright ©2023 Version 1. All rights reserved.

Classification: Controlled

First thought: OCI Data Science

```
[8]: img = cv2.imread("kaggle/input/chest-xray-pneumonia/chest_xray/chest_xray/val/PNEUMONIA/person1946_bacteria_4875.jpeg")

[9]: plt.imshow(img)
     plt.show()
```



Data Preparation

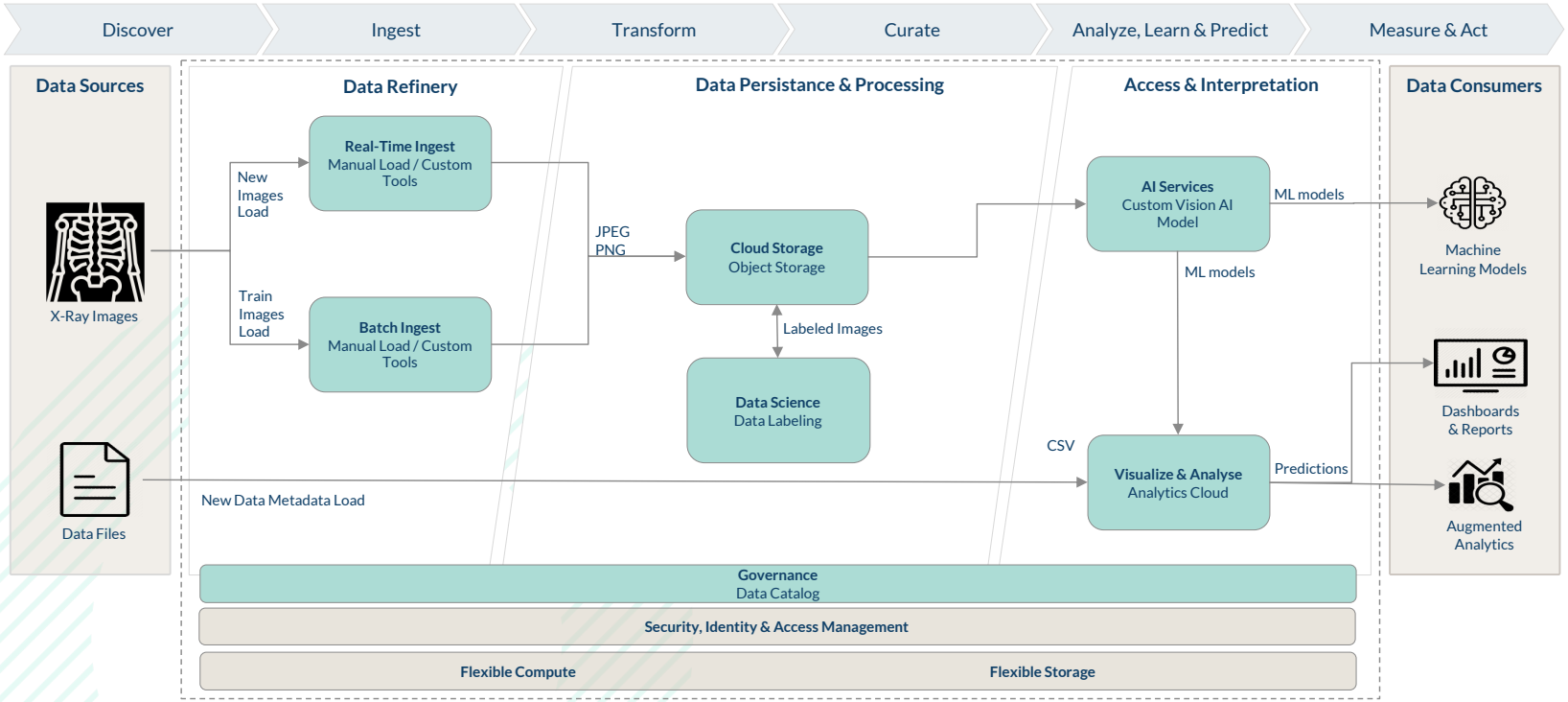
```
[10]: img_size = 150
      labels = ["NORMAL","PNEUMONIA"]

      def data_prep(data_dir):
          data =[]
          for label in labels:
              path = os.path.join(data_dir, label)
              class_num = labels.index(label)
              for img in os.listdir(path):
      #             print(os.path.join(path,img))
      #             clear_output(wait=True)
                  if(img.endswith('.jpeg')):
                      img_arr = cv2.imread(os.path.join(path,img),cv2.IMREAD_GRAYSCALE)
                      resize_arr = cv2.resize(img_arr,(img_size,img_size))
                      data.append([resize_arr,class_num])

          return np.array(data)

[11]: train = data_prep('kaggle/input/chest-xray-pneumonia/chest_xray/chest_xray/train')
      test = data_prep('kaggle/input/chest-xray-pneumonia/chest_xray/chest_xray/test')
      val = data_prep('kaggle/input/chest-xray-pneumonia/chest_xray/chest_xray/val')
```

- Let‘s do some coding in Python and train the classification model
- Then analyze X-Ray images and learn if any of new images present pneumonia

Copyright ©2023 Version 1. All rights reserved.

Classification: Controlled

Use some other OCI Data Lakehouse services instead?

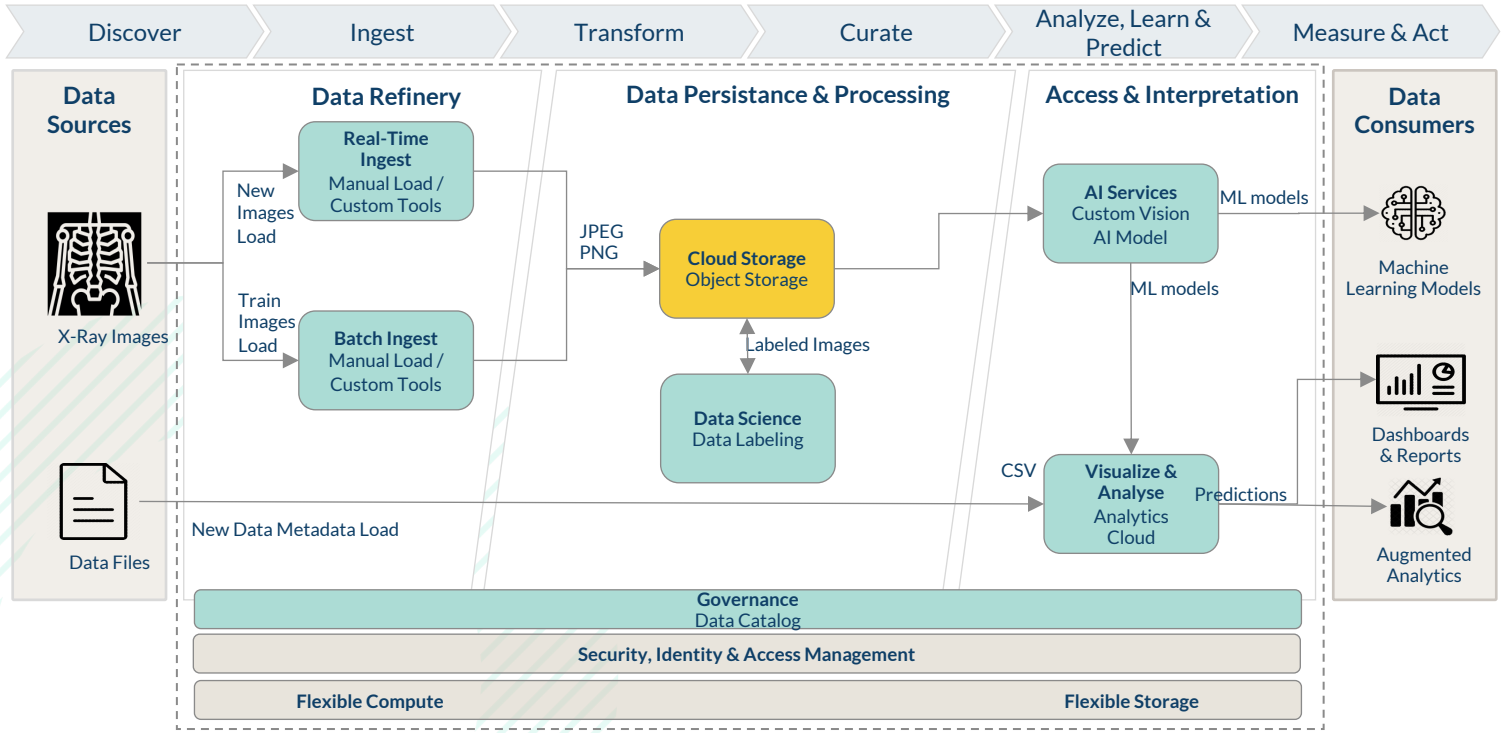


- All X-Ray images are stored in **Object Storage**.
- Before we start a training exercise, X-Ray images are labeled using **Data Labeling** service.
- **Vision AI** service is used to train a custom model for Image Classification.
- New images are loaded and linked into **Oracle Analytics** to perform further analysis.

Copyright ©2023 Version 1. All rights reserved.

Classification: Controlled

Object Storage

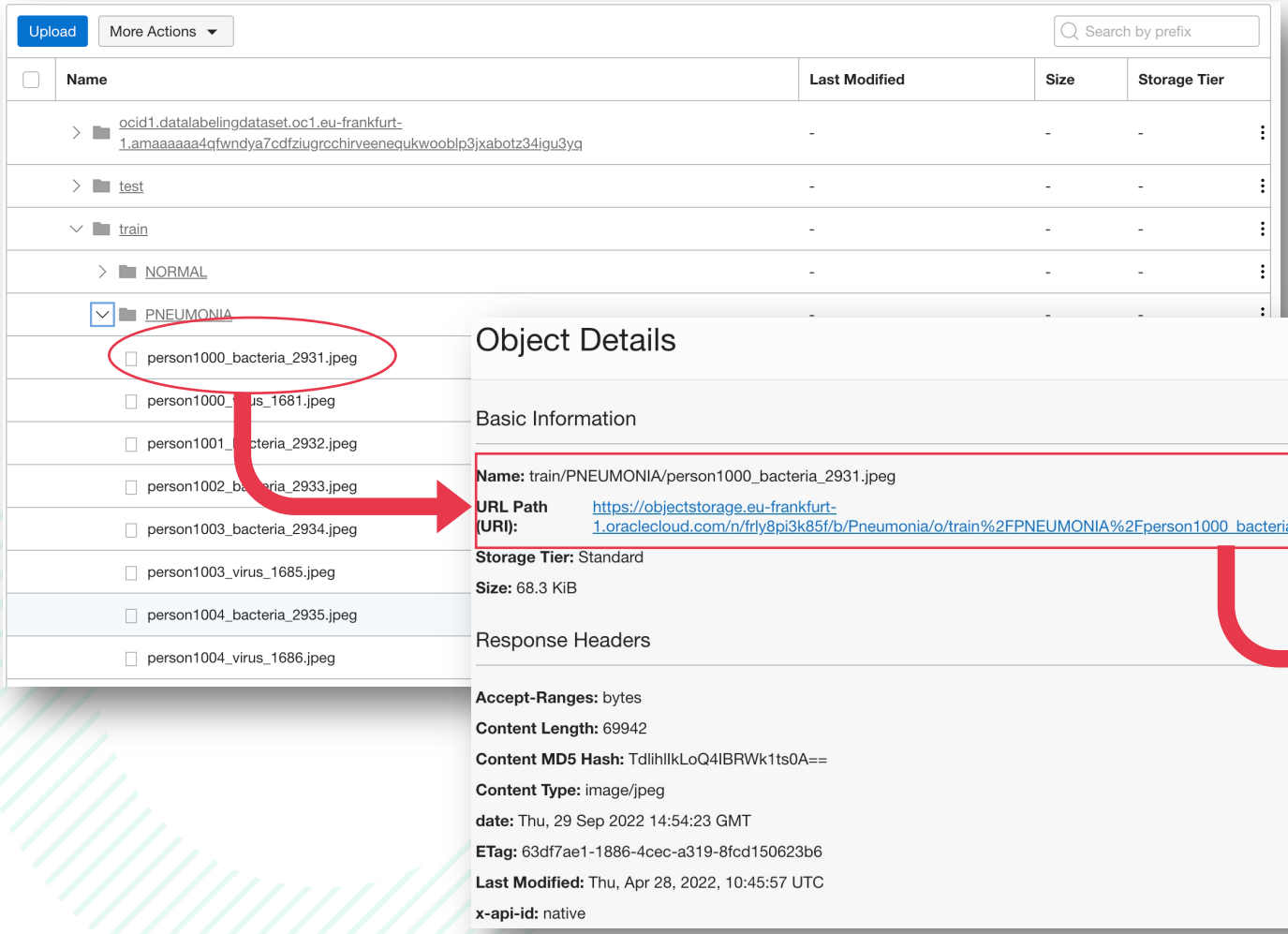


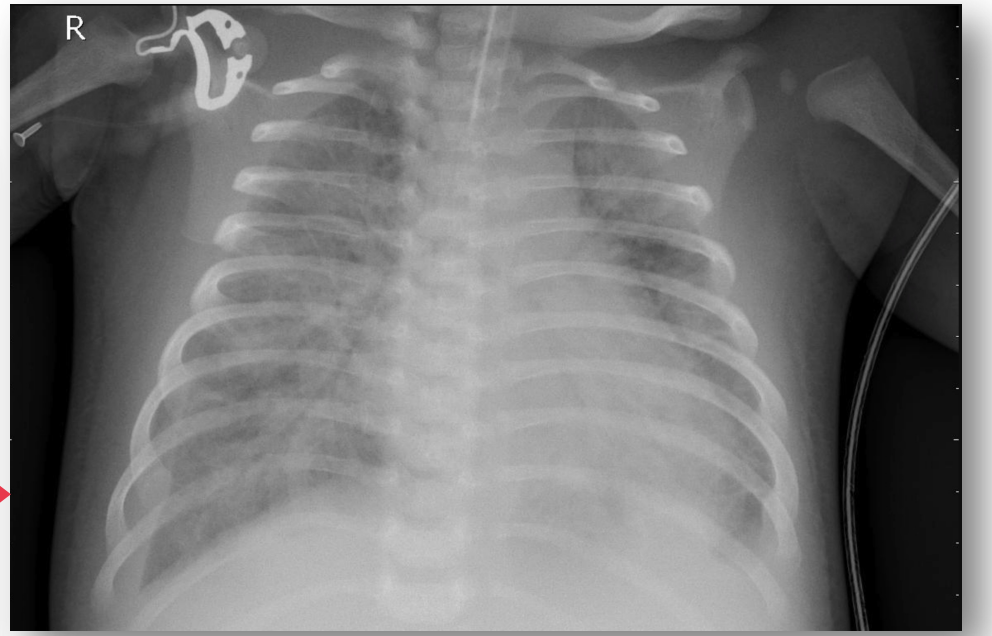
- Internet-scale, high-performance storage platform that offers reliable and cost-efficient data durability.
- Stores an unlimited amount of unstructured data of any content type, including analytic data and rich content, like images and videos.

Copyright ©2023 Version 1. All rights reserved.

Classification: Controlled

Image Bulk Upload

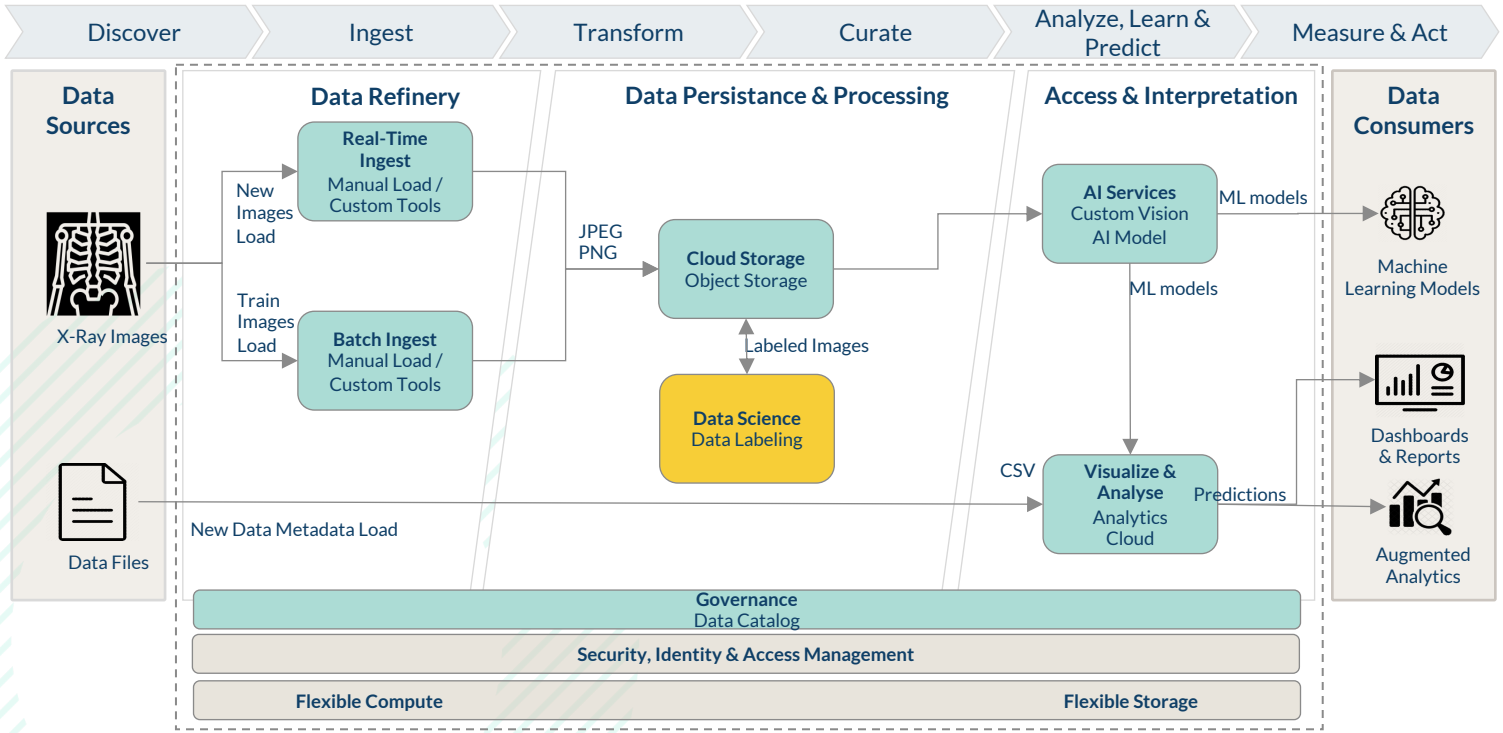




Copyright ©2023 Version 1. All rights reserved.

Classification: Controlled

Data Labeling

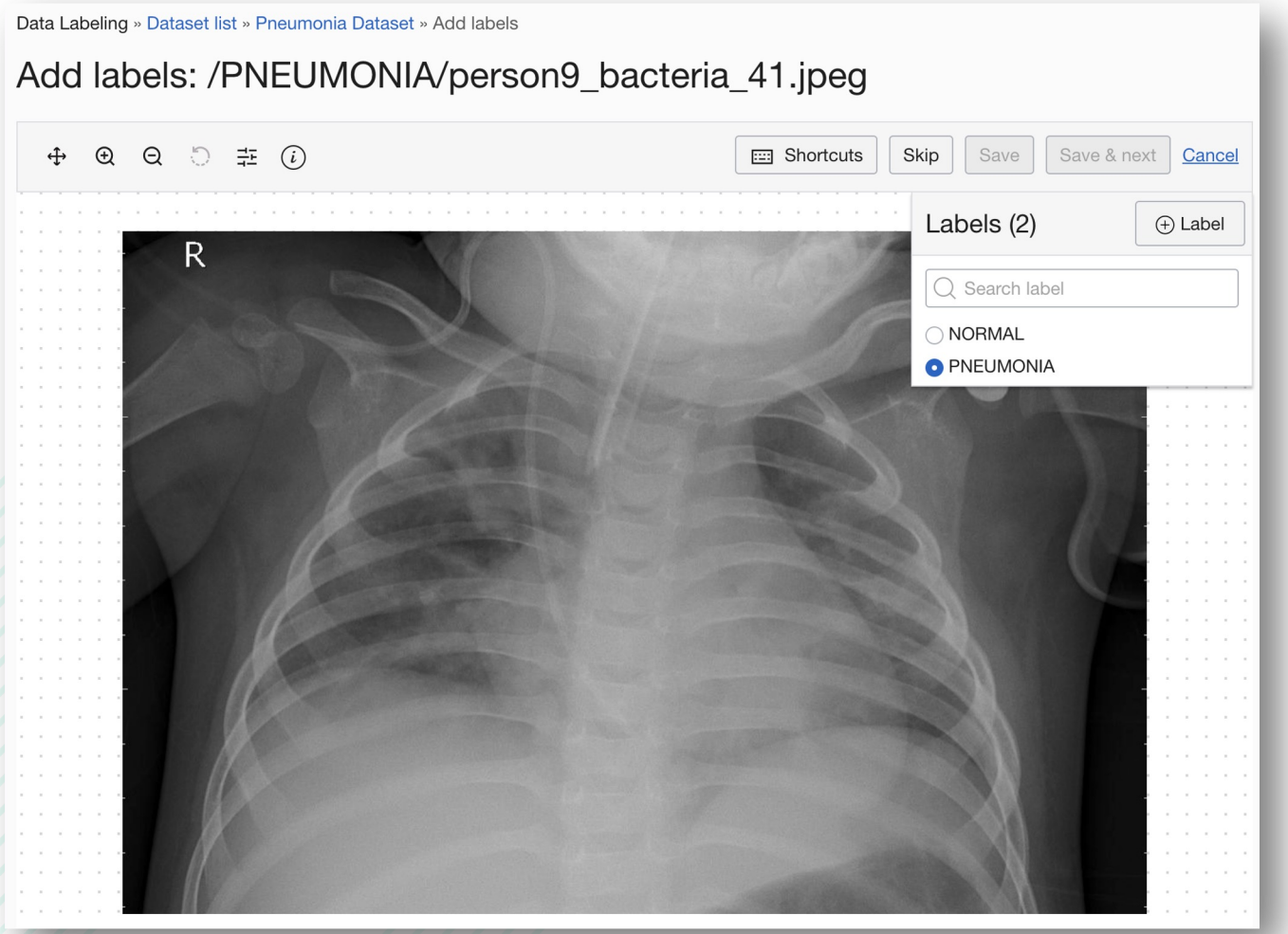


- OCI based service that is used to build labeled data sets.
- In case of images, we need to assign a label to an image, which describes the image and classifies it

Copyright ©2023 Version 1. All rights reserved.

Classification: Controlled

Image Data Labeling

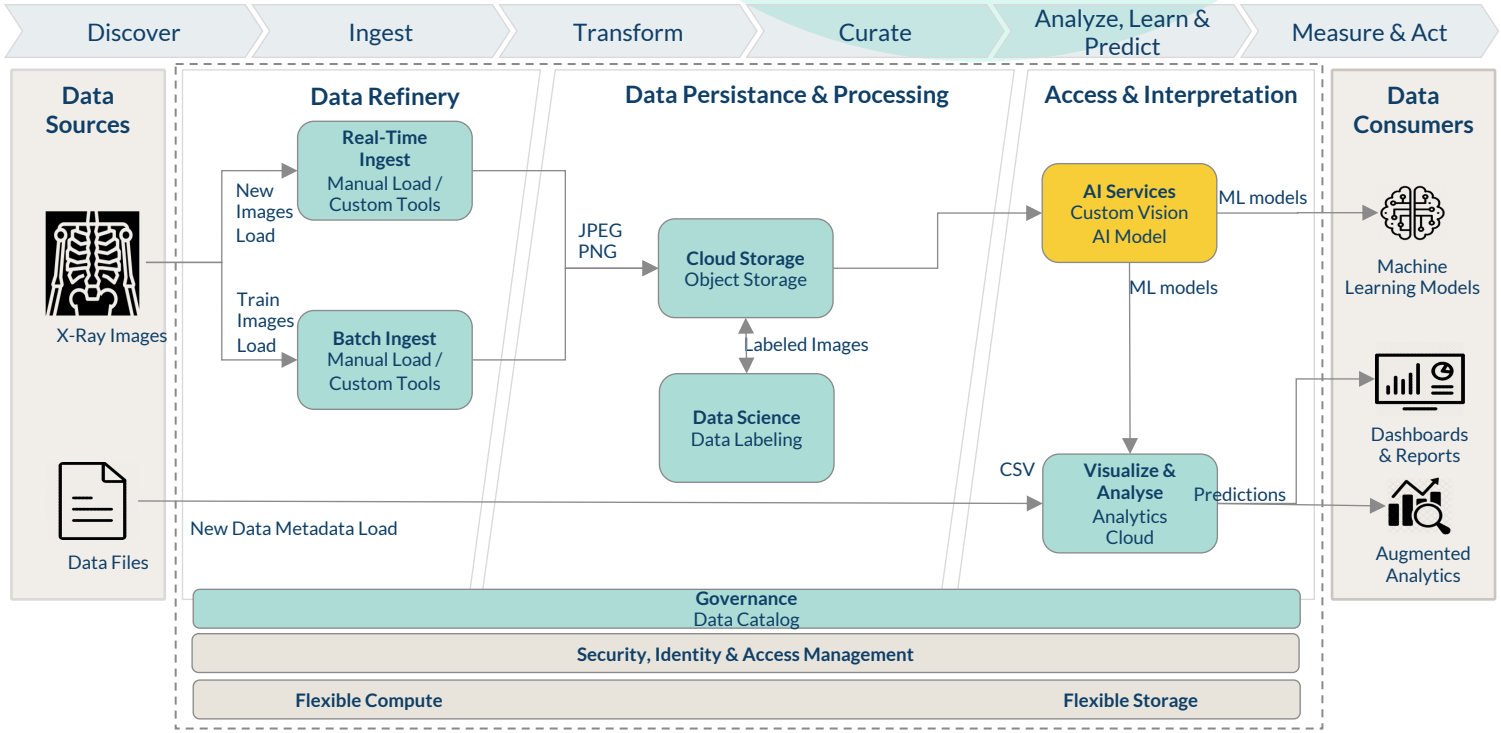



```
import dls_list_records
import dls_create_annotation
import sys
from config import *
import datetime
import labeling_schemes.first_letter as first_letter
import labeling_schemes.first_match as first_match

def main():
        num_records = list_records_limit
        count_batches=1
        count_records_total=0
        while num_records == list_records_limit: # if num_records < list_records_limit,
that would indicate the last loop i.e. batch
                names, ids, num_records = dls_list_records.main()
                count_records_in_batch=0
                for n in names:
                        if labeling_algorithm == "first_match":
                                first_match.main(name=n,
record_id=ids[count_records_in_batch])
                        elif labeling_algorithm == "first_letter":
                                first_letter.main(name=n,
record_id=ids[count_records_in_batch])
                        count_records_in_batch+=1
                        count_records_total+=1
                        print("current time: " + str(datetime.datetime.now()))
                        print("current batch #: " + str(count_batches))
                        print("# records labeled in current batch: " +
str(count_records_in_batch))
                count_batches+=1
        count_batches-=1
        print("-----")
        print("TOTALS:")
        print("current time: " + str(datetime.datetime.now()))
        print("# batches: " + str(count_batches))
        print("# records labeled: " + str(count_records_total))
        print()
main()
```


Copyright ©2023 Version 1. All rights reserved.
Classification: Controlled

Data Science & AI Services

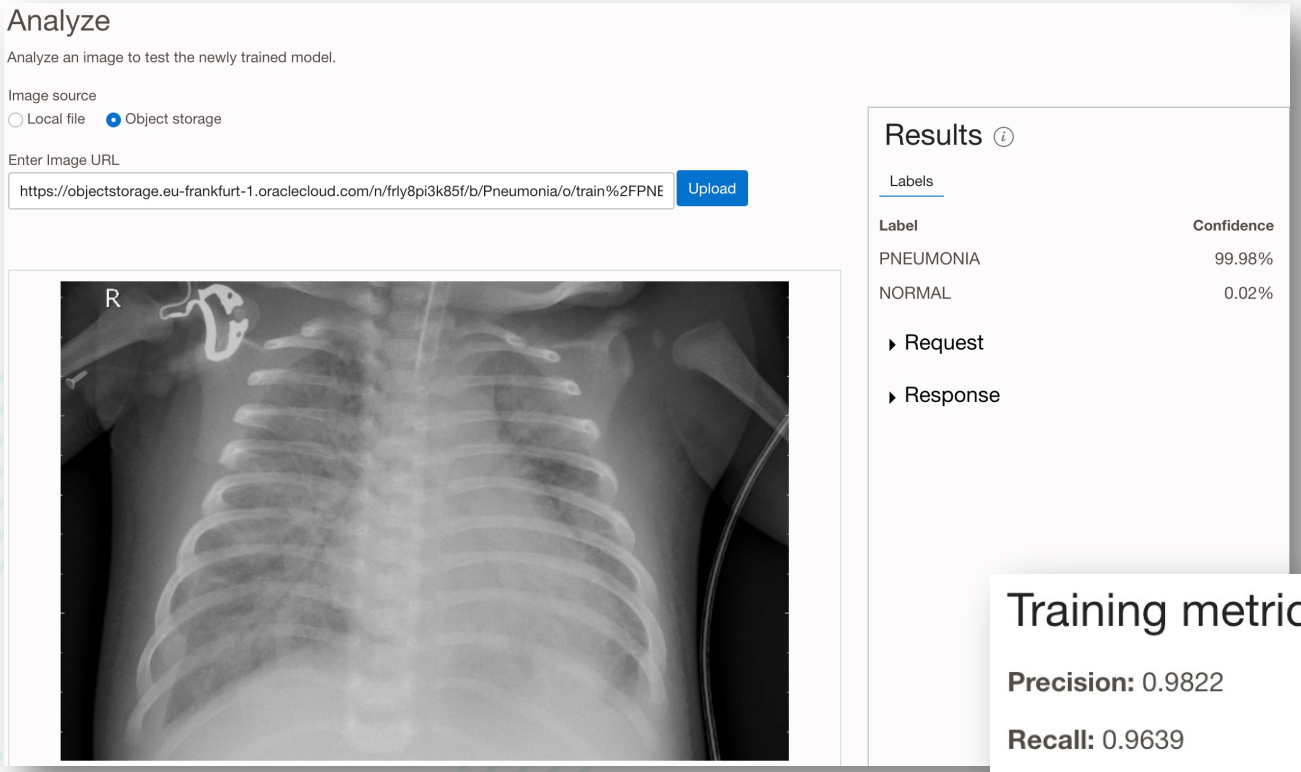
- Data Science Services
  - Data Science
  - Data Labeling
- AI services
  - Vision
  - Speech
  - Language
  - Anomaly Detection
  - Digital Assistant



Copyright ©2023 Version 1. All rights reserved.

Classification: Controlled

Vision AI Service

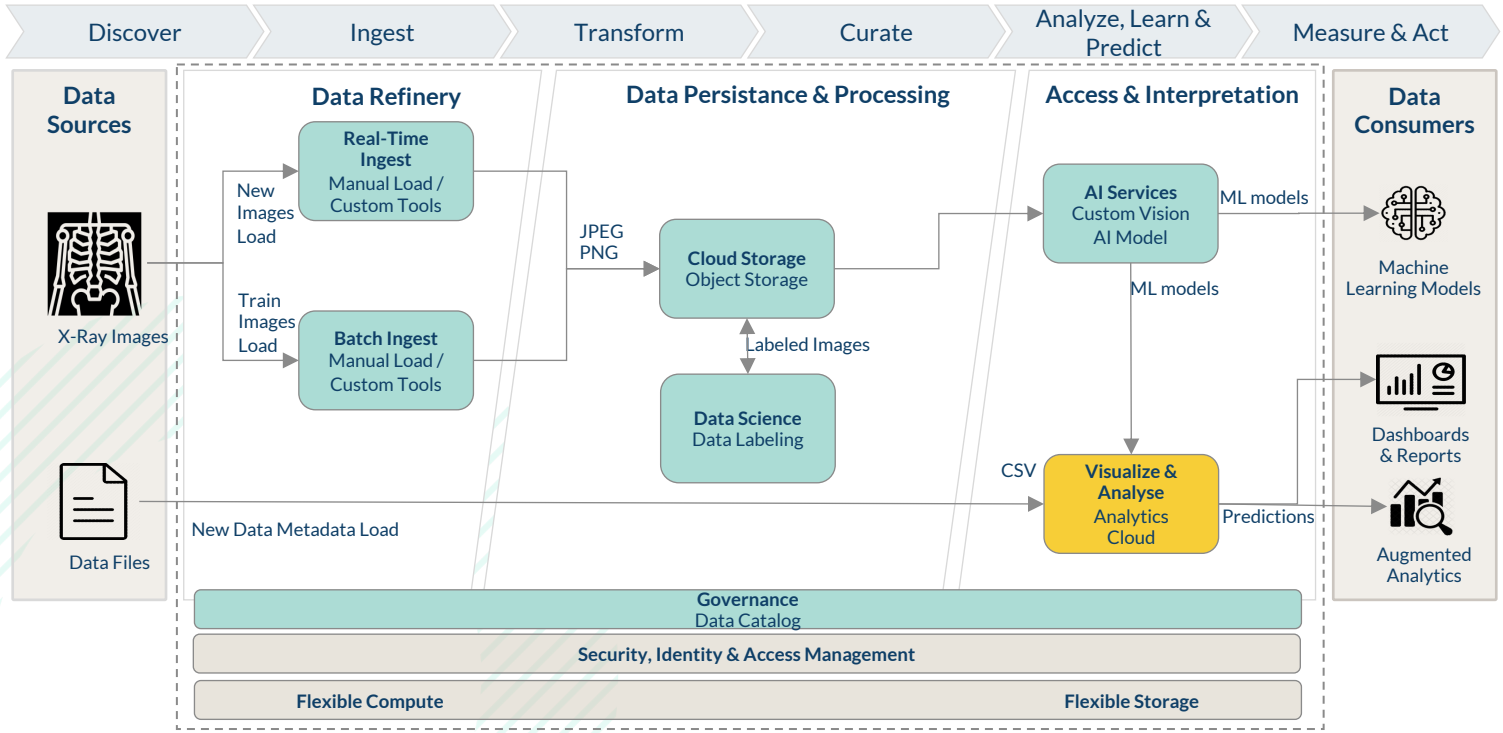


- OCI Vision is a serverless, multi-tenant service, accessible using the Console, or over REST APIs.
- Upload images to detect and classify objects in them.
- Process images in batch using asynchronous API endpoints

Copyright ©2023 Version 1. All rights reserved.

Classification: Controlled

Oracle Analyitcs



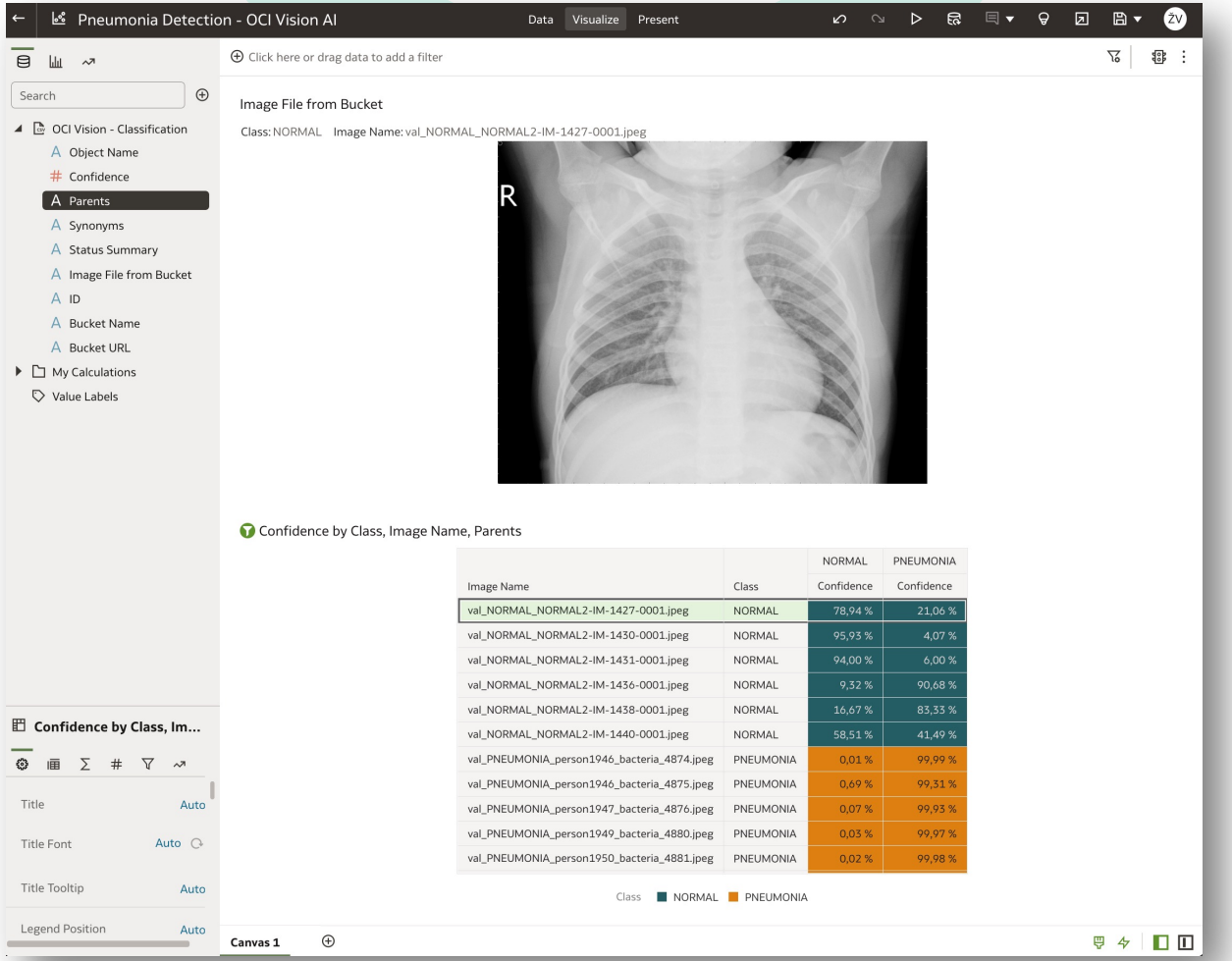
- Complete platform with ready-to-use services for a wide variety of workloads and data. Offering valuable, actionable insights from all types of data in the cloud, on-premises, or in a hybrid deployment.
- Empowers business users, data engineers, and data scientists to access and process relevant data, evaluate predictions, and make quick, accurate decisions.

Copyright ©2023 Version 1. All rights reserved.

Classification: Controlled

Oracle Analytics and Vision AI working together

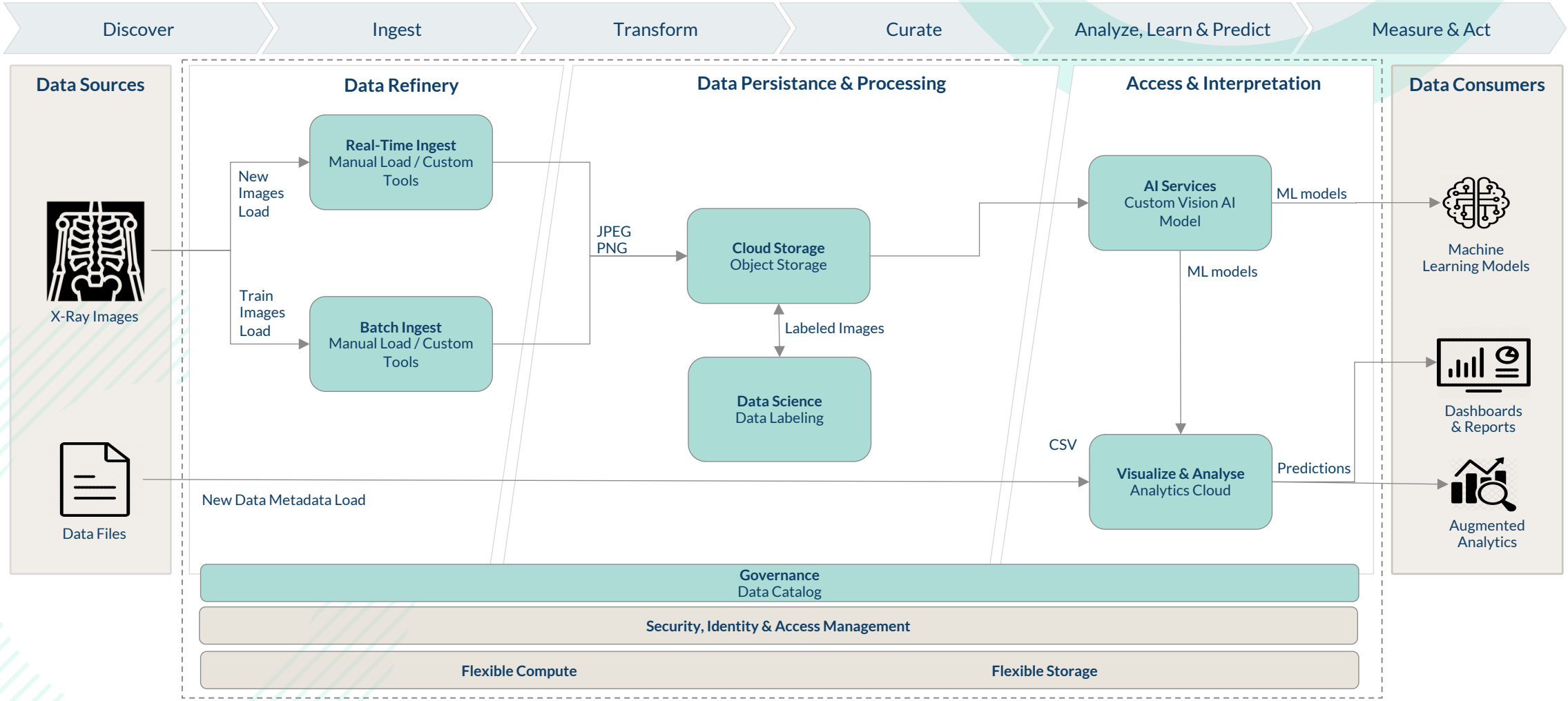
- Set connection to Vision AI
- Prepare images (metadata dataset) to analyze
- Register Vision AI model in Oracle Analytics
- Process images
- Perform analysis



Copyright ©2023 Version 1. All rights reserved.

Classification: Controlled

OCI Data Lakehouse Services for Pneumonia Detection



Copyright ©2023 Version 1. All rights reserved.

Classification: Controlled

Welcome to LiveLabs

Oracle LiveLabs gives you access to Oracle's tools and technologies to run a wide variety of labs and workshops.

Experience Oracle's best technology, live!

Developer | DBA | Data Scientist | DevOps | Low Code Developer

Featured Workshops

View All Workshops

Monitor Oracle APEX Applications with OCI Monitoring Custom Metrics

Author: Adrian Png, Senior Cloud Solutions Architect, Insum Solutions Inc. Explore how to use (..)

1 hr

Efficient Resource Management for Kubified Java Apps

Authors: Elder Moraes, Developer Advocate, Red Hat & Ana-Maria Mihalceanu, Sr. Developer Advocate, (..)

2 hrs

Classify X-Ray Images for Pneumonia using Analytics Cloud and Vision AI Services

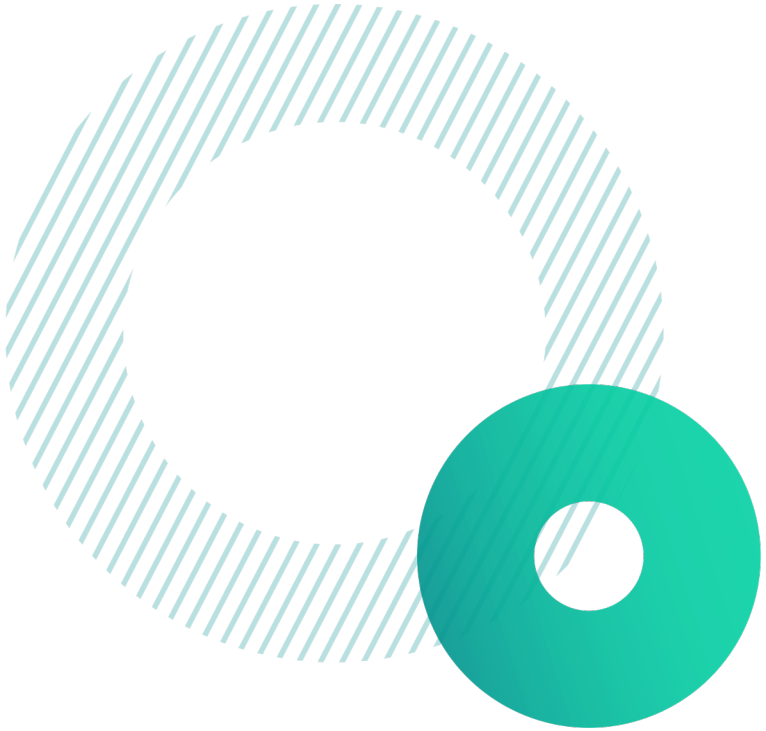
Author: Žiga Vaupot, Oracle ACE Pro - Business Intelligence, Qubix. Explore organizing image (..)

4 hrs 904 Views

21c New Features on Autonomous Database

Explore the new features available in the latest release of the Oracle Database on Autonomous (..)

2 hrs 5289 Views



Thank You

Copyright ©2023 Version 1. All rights reserved.

Classification: Controlled