VERSION 1

OCI Vision & Oracle Analytics

Just like a Box of Chocolates

Presented By: Žiga Vaupot Oracle ACE Pro SIOUG

Date: Rovinj, 19. 10. 2023

Company 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

€350M+
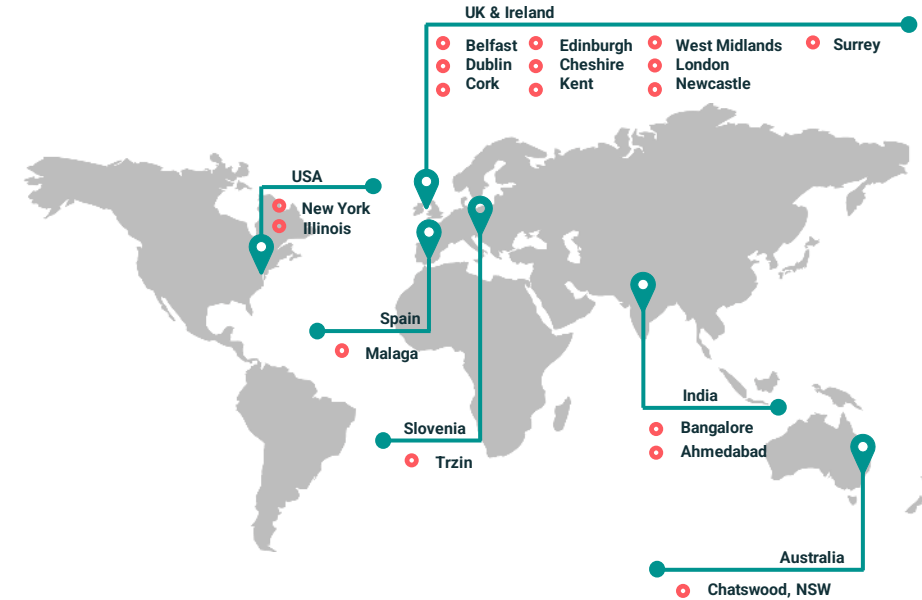Revenue

12 Years
Voted as a Great Place to Work

Industry Best Practice

Top Tier Deep Technology Partners

3200+ Employees across our 17 offices worldwide:

UK & Ireland
- Belfast
- Dublin
- Cork
- Edinburgh
- Cheshire
- Kent
- West Midlands
- London
- Newcastle
- Surrey

USA
- New York
- Illinois

Spain
- Malaga

Slovenia
- Trzin

India
- Bangalore
- Ahmedabad

Australia
- Chatswood, NSW

Recent Acquisitions

Automation Logic
DevOps transformation and delivery

Qubix
Ready-to-run Oracle Solutions

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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 | 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 PARTNERNETWORK
Cloud Program

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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

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Delivering customer success in Oracle Applications

Oracle Analytics & AI Services

Welcome to LiveLabs

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

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Data Scientist

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Featured Workshops

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DB Security Basics

Learn to use database security features to protect sensitive data

⏱ 5 hrs   39324 Views

Tales from the Dark Side: Hacking the Database

Explore how to protect your sensitive data from a ransomware attack with Oracle Database security (..)

⏱ 45 mins   6088 Views

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   1711 Views

Enterprise Manager Fundamentals

Explore EM13c using a pre-configured Enterprise Manager, repository and Oracle Database targets.

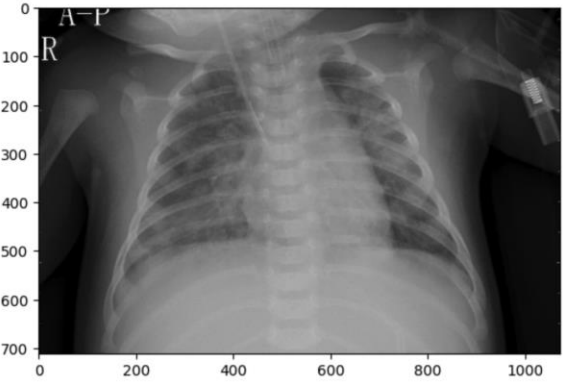⏱ 4 hrs   34237 Views

The Task

- Library of Chest X-Ray images*

- Train the model and identify which patients have pneumonia!

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

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First thought: OCI Data Science

- Let's do some coding in Python and train the classification model.

- Then analyze X-Ray images and learn if any of them show pneumonia.

Alternative: Why not use OCI and its AI Services instead?
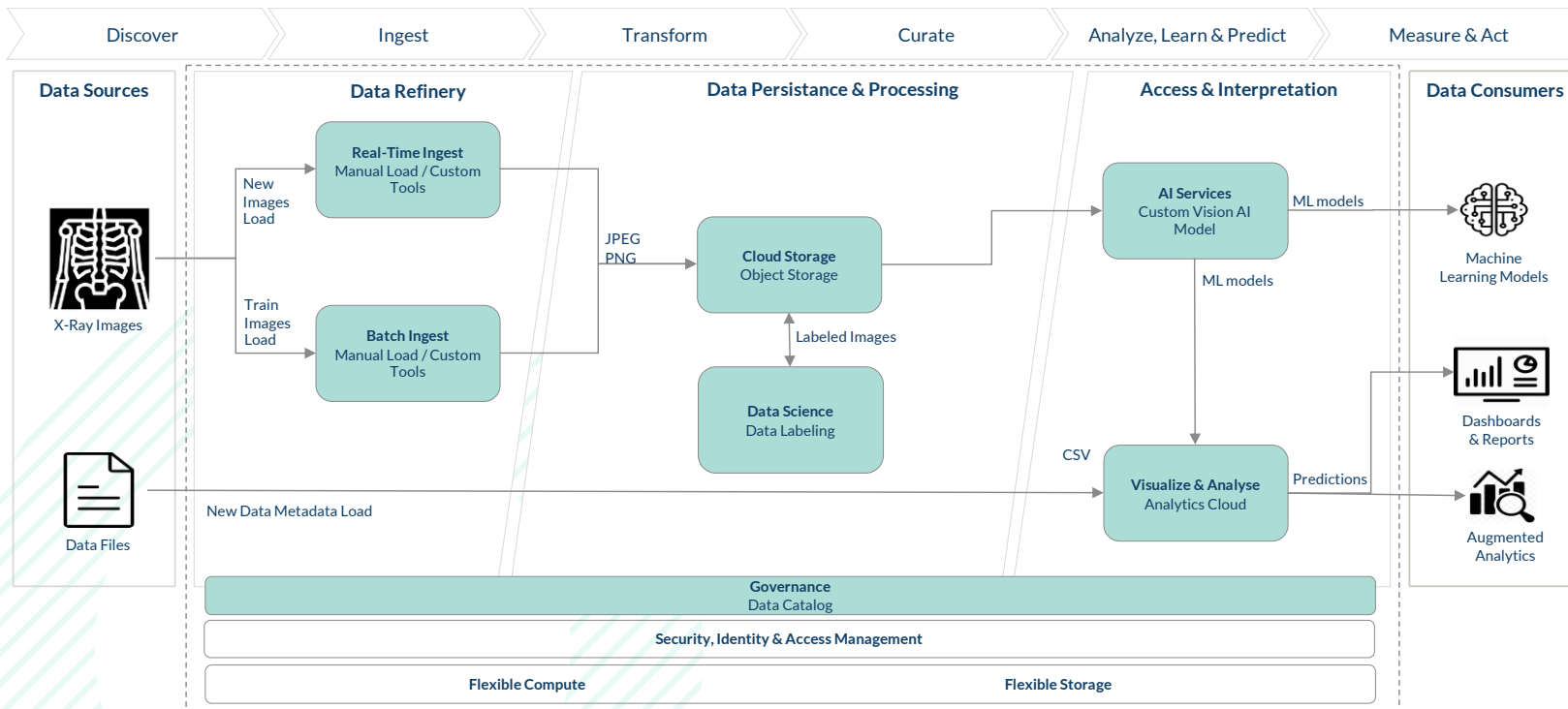
- All X-Ray images can be stored in **Object Storage**.

- X-Ray images can be labeled by **Data Labeling** service.

- **Vision AI** service can be used to train a custom model for Image Classification.

- For predictions and further analysis **Oracle Analytics** can be used.

Object Storage
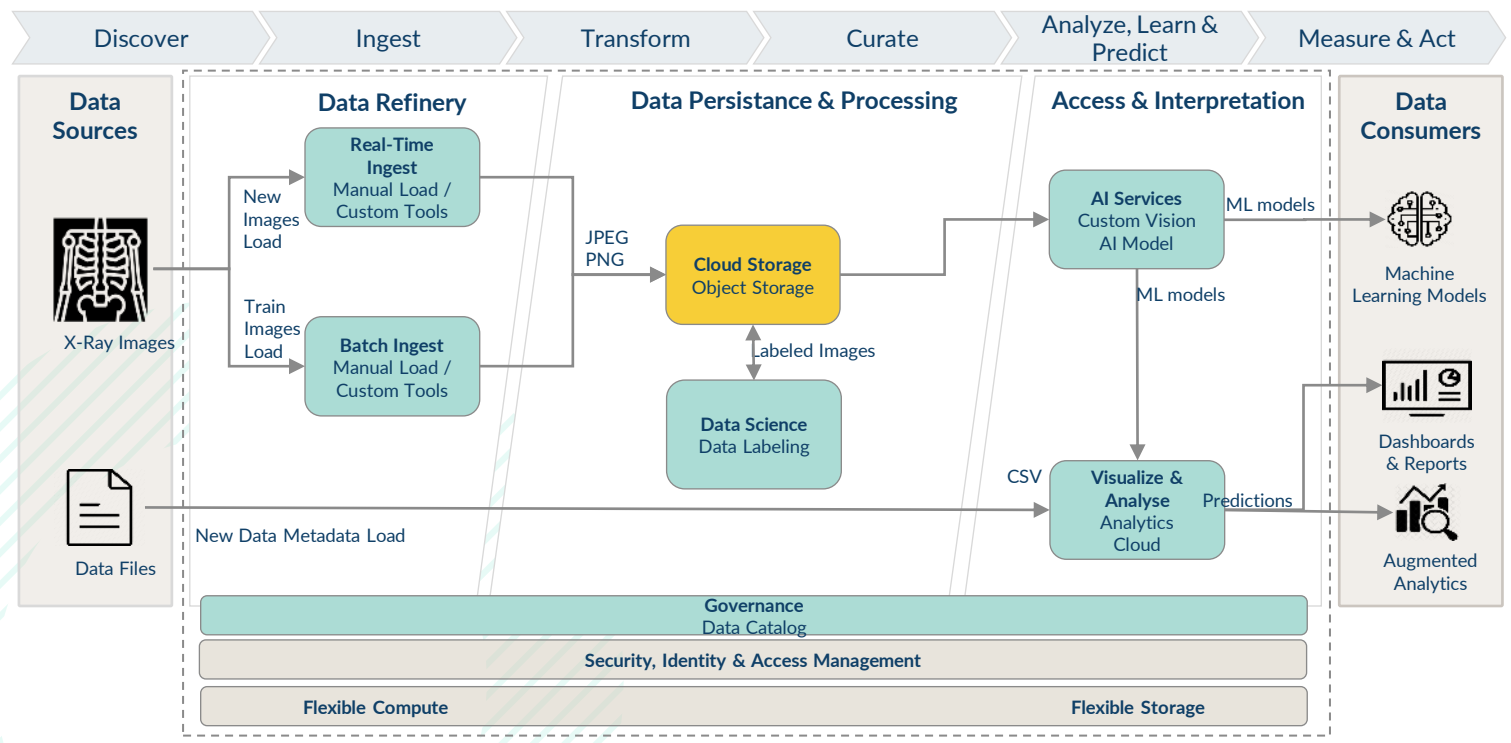
- Internet-scale, high-performance storage platform that offers reliable and cost-efficient data durability.

- Stores an unlimited amount of unstructured data of any content type, including analytic data and rich content, like images and videos.

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Image Bulk Upload

Upload can be done by using:

- Console **upload utility**
- **Command Line Interface** (preferred in case of "many" objects)

Image upload using Cloud Shell (CLI)

```
$ ### Download images from Kaggle

$ wget -x -c --load-cookies kaggle_cookies.txt
https://www.kaggle.com/datasets/paultimothymooney/chest-xray-
pneumonia/download?datasetVersionNumber=2


$ ### Unzip downloaded images

$ mkdir pneumonia-dataset

$ unzip www.kaggle.com/datasets/paultimothymooney/chest-xray-
pneumonia/download\?datasetVersionNumber\=2 -d pneumonia-dataset/


$ ### Upload images into your bucket

$ oci os object bulk-upload -ns frly8pi3k85f -bn X-Ray-Images-for-Training --src-
dir /home/X_Ray/pneumonia-dataset/chest_xray/chest_xray/train --overwrite --
content-type 'image/jpeg'
```

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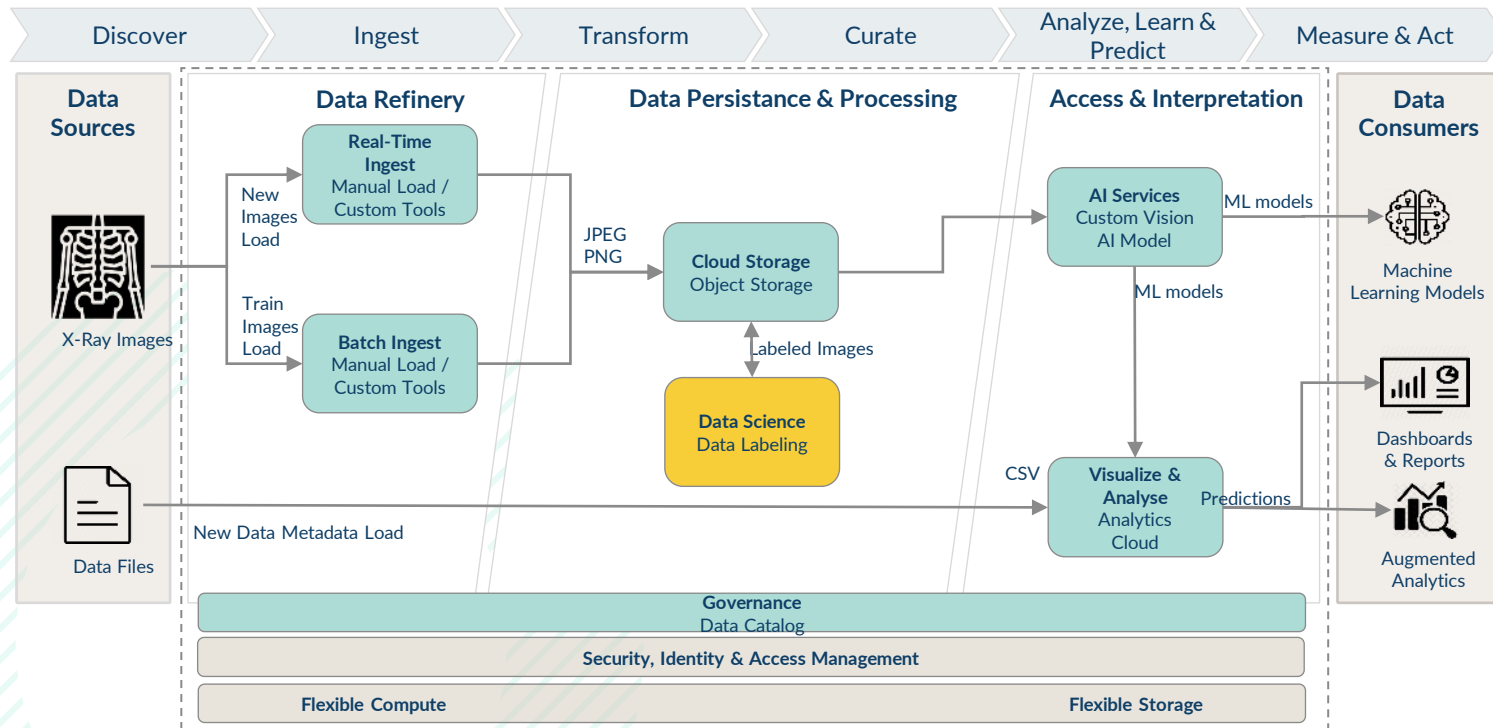
Data Labeling

- 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

Image Data Labeling

Data Labeling » Dataset list » Pneumonia Dataset » Add labels
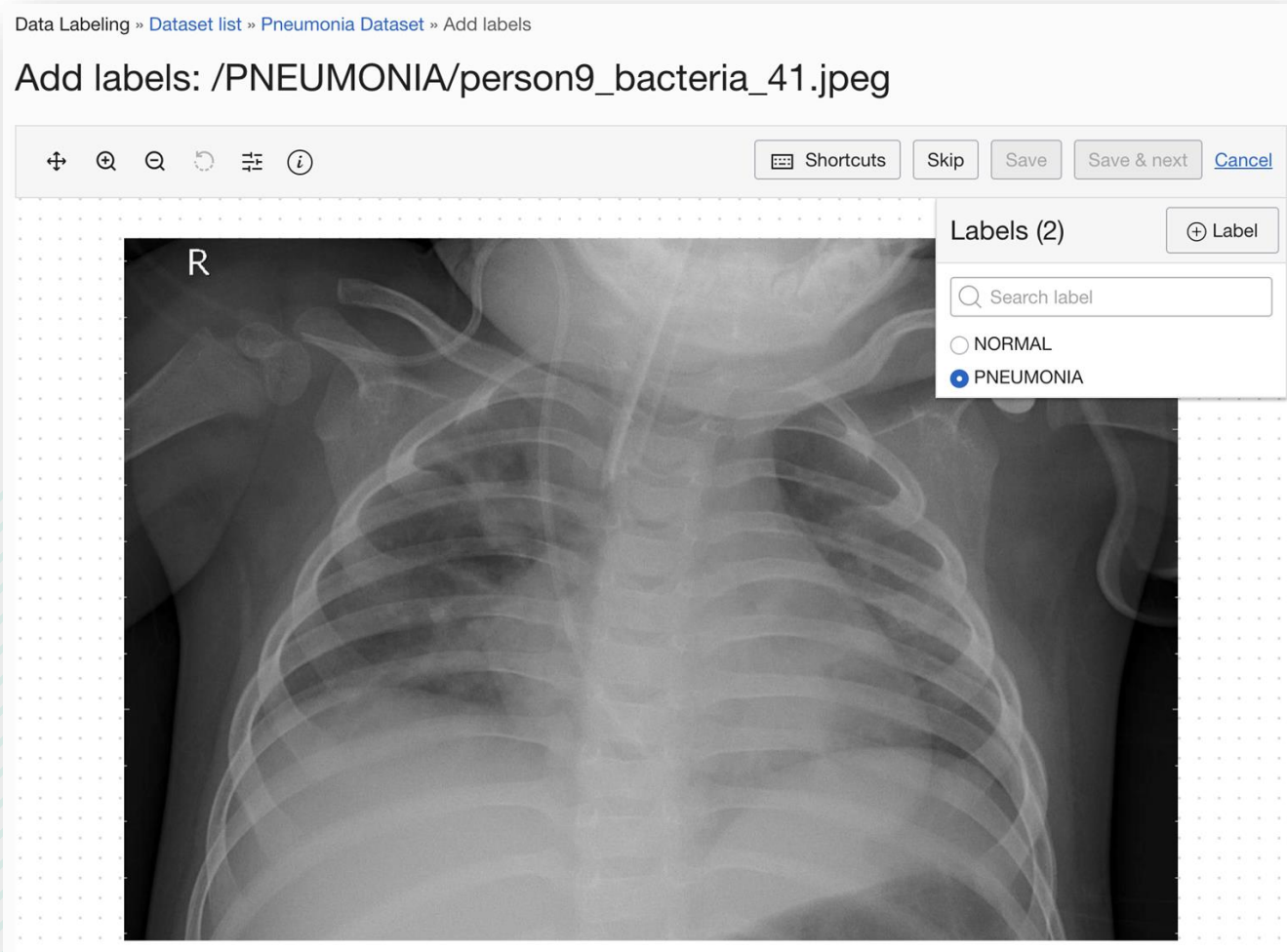
Add labels: /PNEUMONIA/person9_bacteria_41.jpeg

Image labelling can be done:

- **Manually** by using graphical user interface and assigning labels to images one by one

- **Programmatically**, for example by using regular expressions or similar.

```
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()
```

Data Science & AI Services

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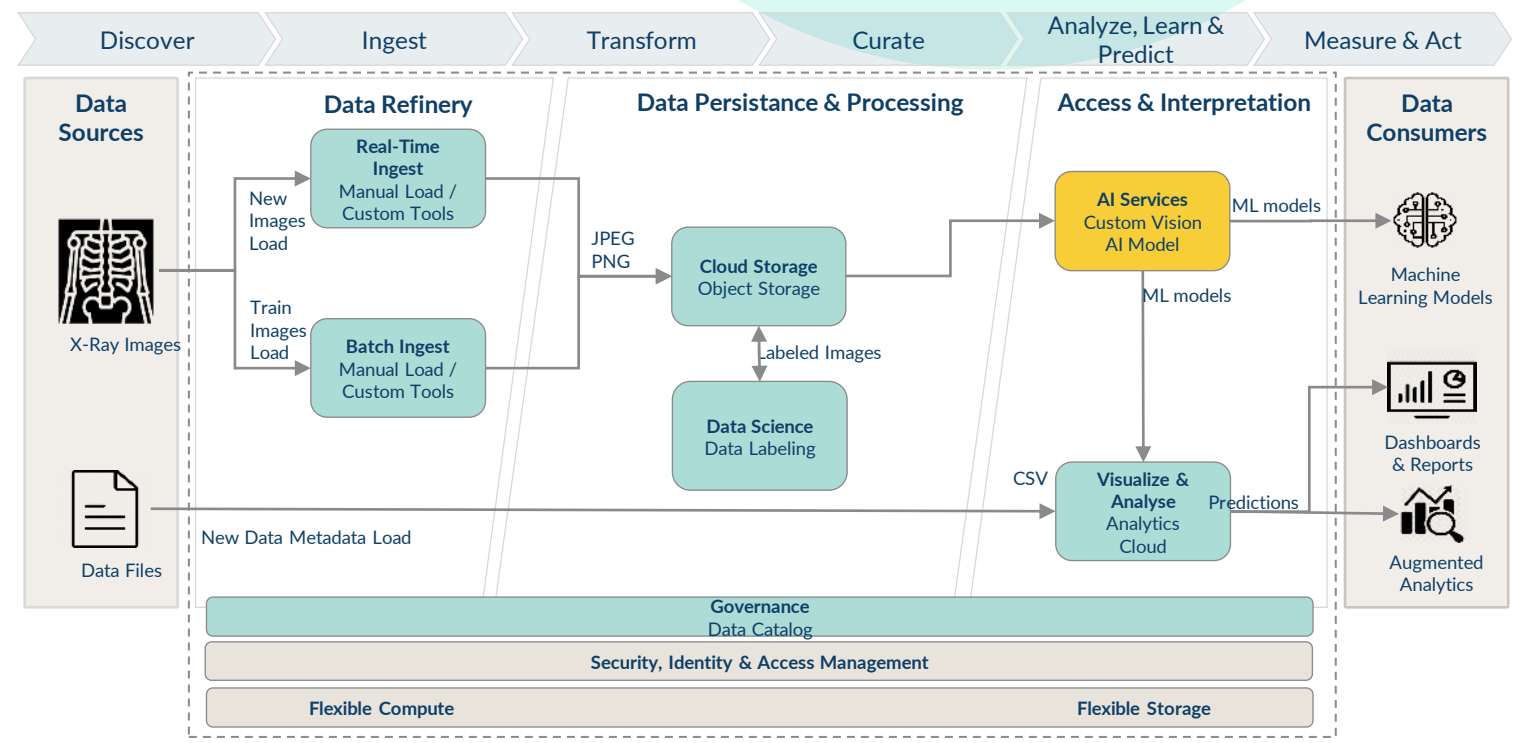
Vision AI Service
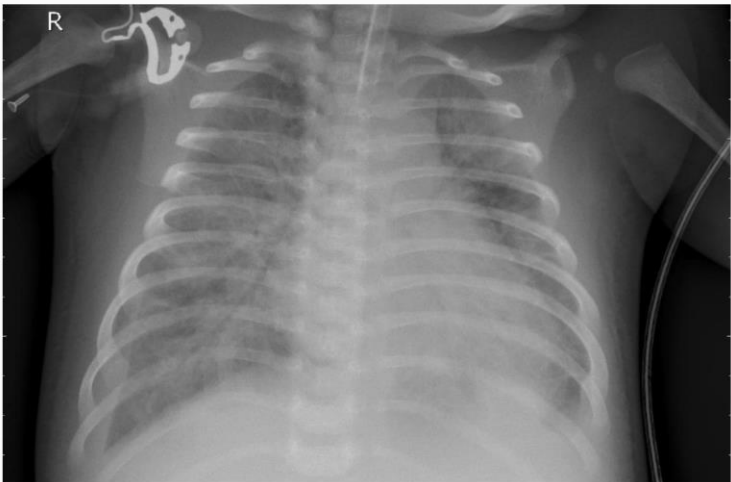

- OCI Vision is a serverless, multi-tenant service, accessible using the Console, or over REST APIs.
- Upload images to detect and classify objects in them.
- Process images in batch using asynchronous API endpoints

How Vision AI works?
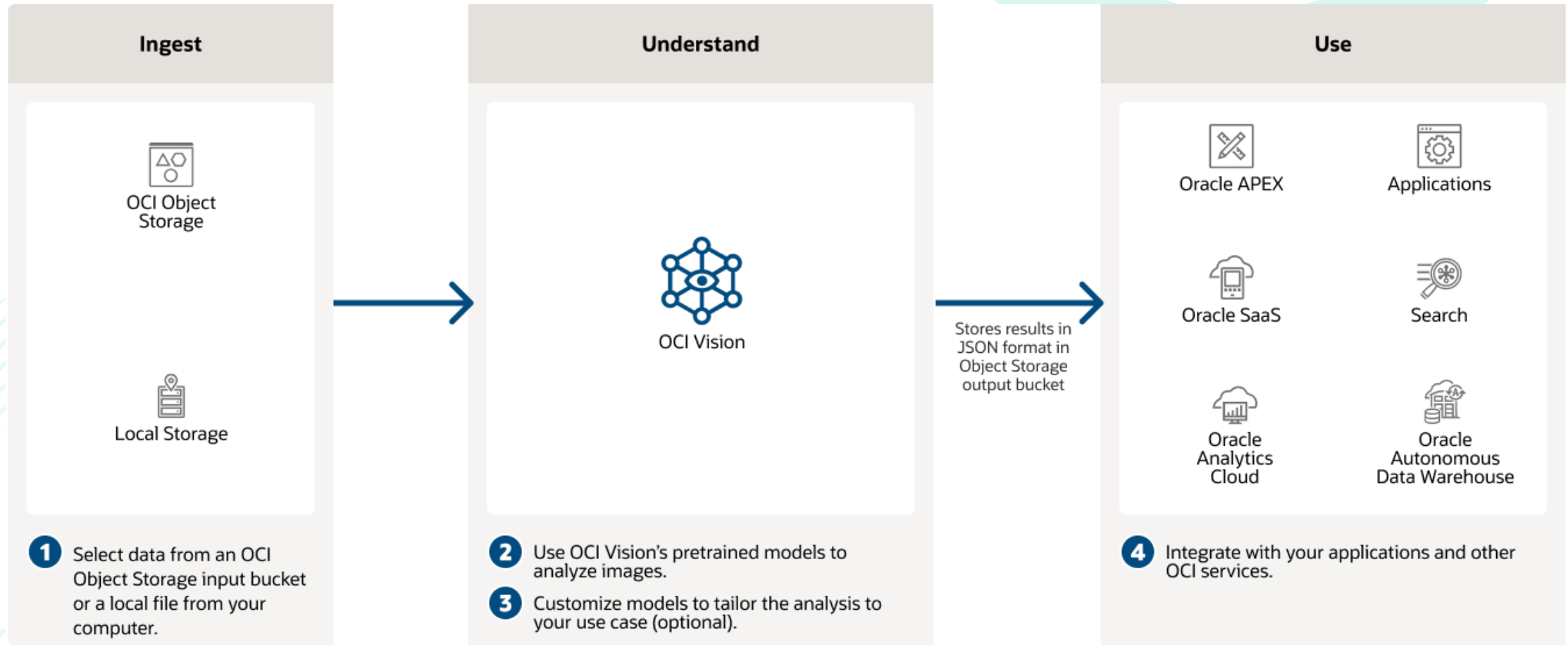
Oracle Analyitcs
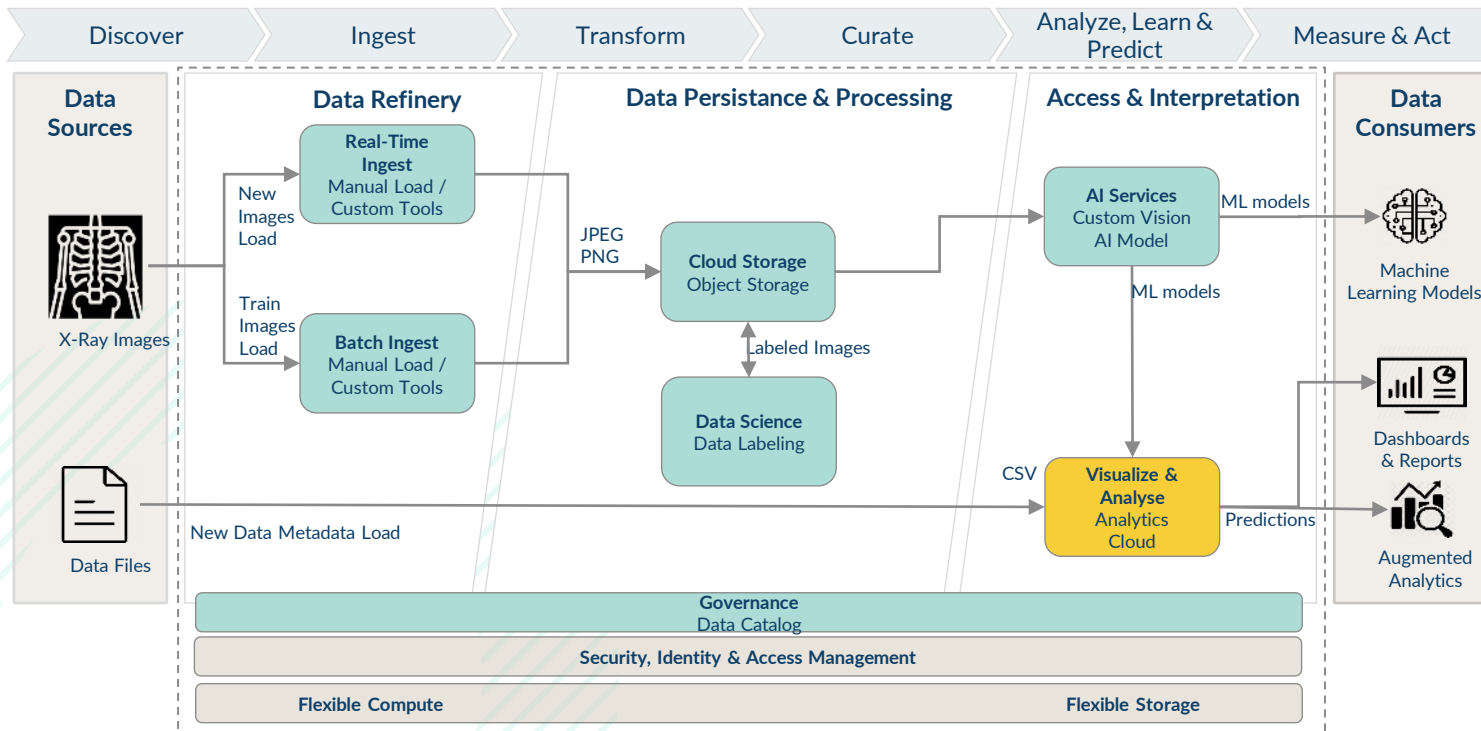
- Complete platform with ready-to-use services for a wide variety of workloads and data. Offering valuable, actionable insights from all types of data in the cloud, on-premises, or in a hybrid deployment.

- Empowers business users, data engineers, and data scientists to access and process relevant data, evaluate predictions, and make quick, accurate decisions.

Oracle Analytics and Vision AI working together

- Set connection to Vision AI

- Prepare a dataset containing image locations

- Register Vision AI model in Oracle Analytics

- Process images using Data Flows

- Visualize and perform analysis

OCI Data Lakehouse Services for Pneumonia Detection

Discover | Ingest | Transform | Curate | Analyze, Learn & Predict | Measure & Act

Data Sources

X-Ray Images

Data Files

Data Refinery

New Images Load

Train Images Load

Real-Time Ingest
Manual Load / Custom Tools

Batch Ingest
Manual Load / Custom Tools

JPEG PNG

New Data Metadata Load

Data Persistance & Processing

Cloud Storage
Object Storage

Labeled Images

Data Science
Data Labeling

Access & Interpretation

AI Services
Custom Vision AI Model

ML models

CSV

Visualize & Analyse
Analytics Cloud

Predictions

Data Consumers

ML models

Machine Learning Models

Dashboards & Reports

Augmented Analytics

Governance
Data Catalog

Security, Identity & Access Management

Flexible Compute   **Flexible Storage**

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Thank You