

ORACLE

Getting more from your JD Edwards with AI and Machine Learning

JD Edwards Nordic Conference

May 14, 2024

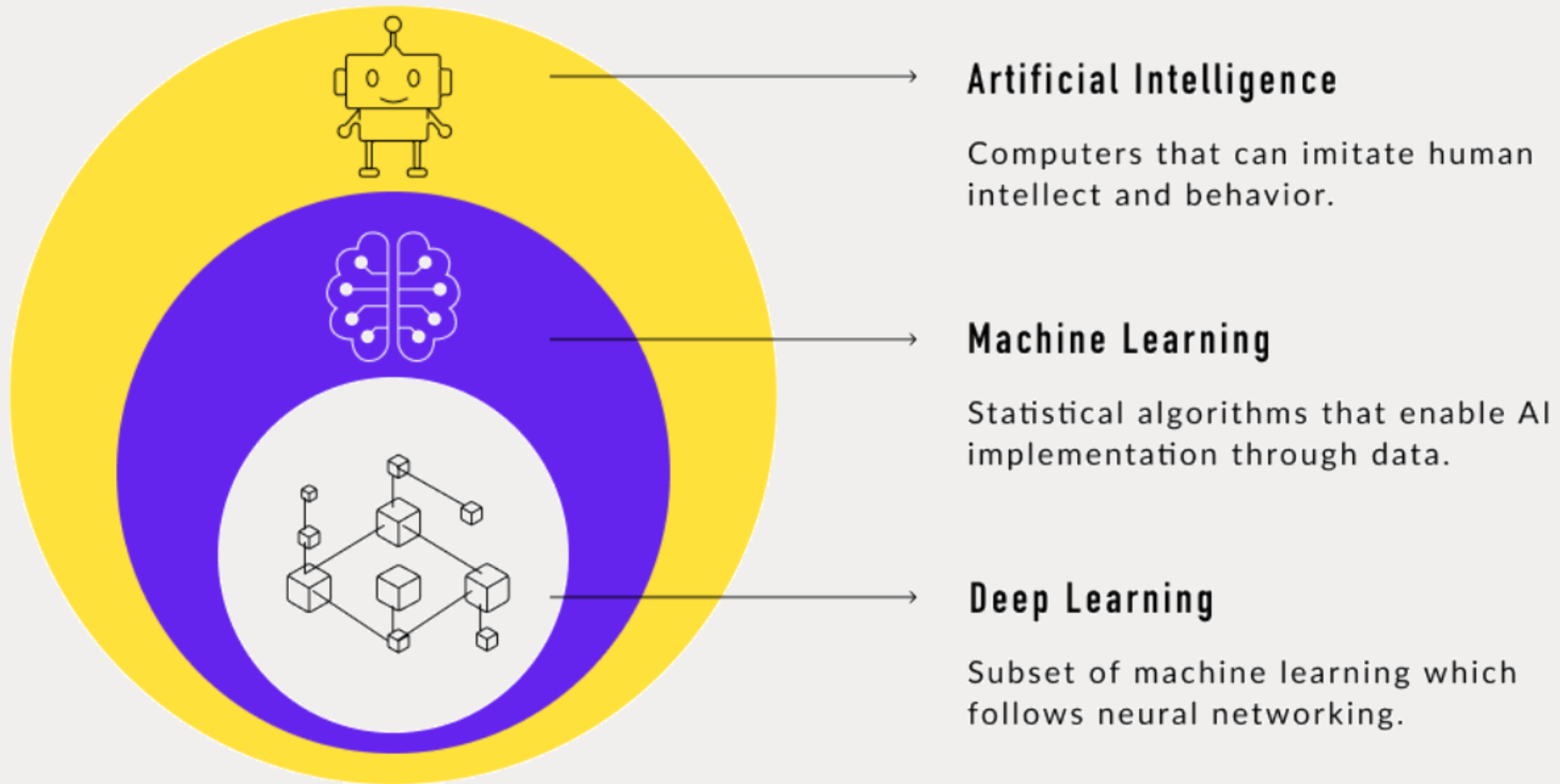
Mark Herwege

Master Principal Solution Engineer JDE

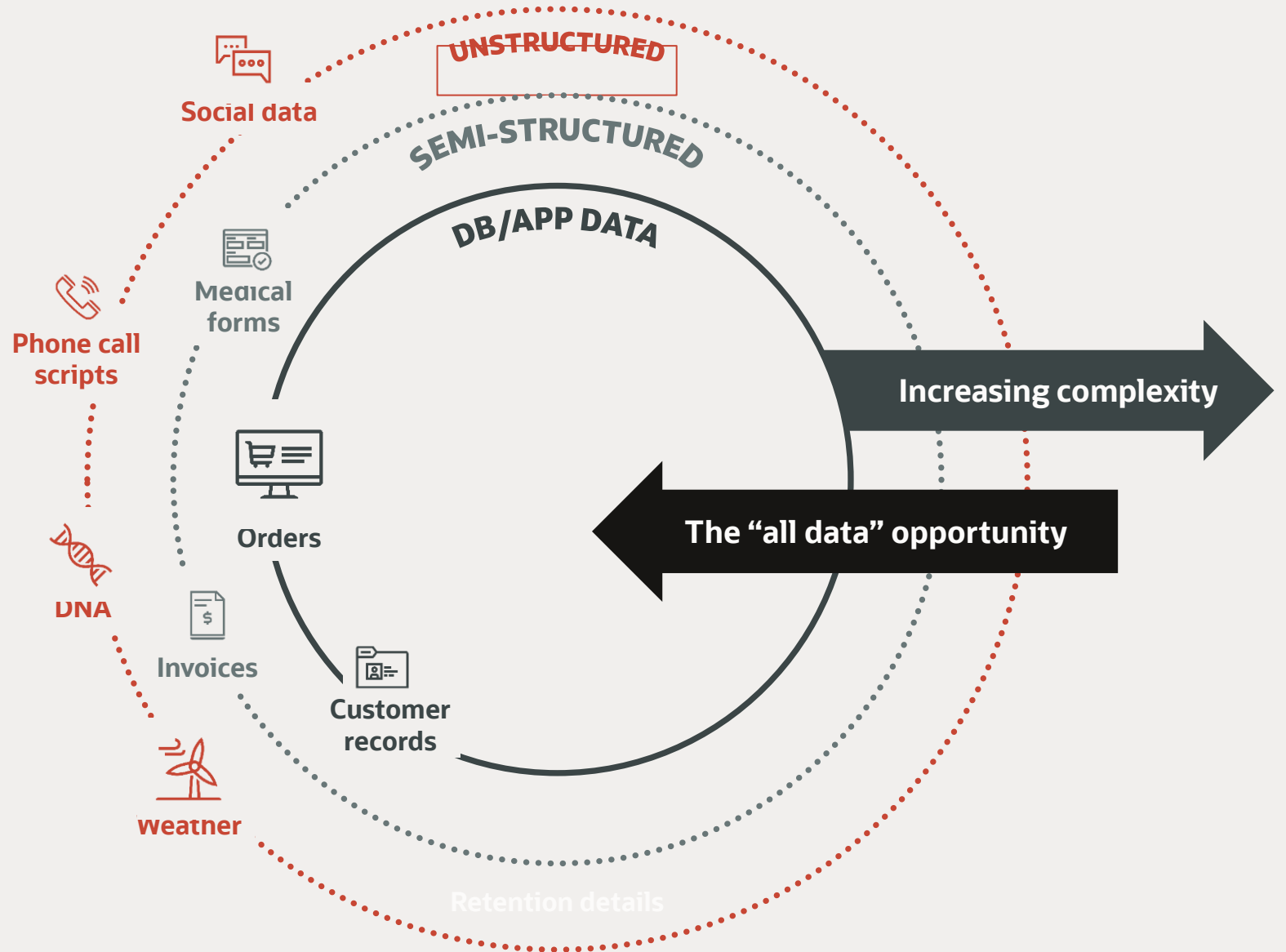
Oracle Applications Unlimited Western Europe



Glossary



It all starts with **data**

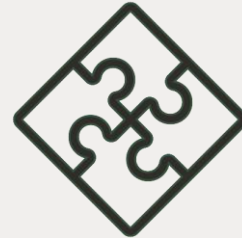


What customers want for their production AI



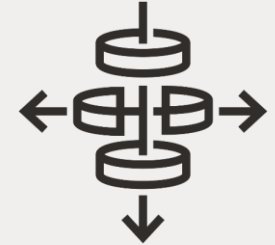
AI that works for your enterprise scenarios

- Pretrained, customizable models for your industry



Collaborate with a single, consistent experience

- Single discovery and publishing experience for models, features, datasets and labels
- Consistent APIs



Open and extensible platform

- Use favorite open-source tools and frameworks
- Run your AI models anywhere
- Portability- no lock-in

AI across the Oracle Cloud ecosystem

Data Privacy and Security

Oracle AI Partners

Applications

Fusion Applications

NetSuite

Fusion Analytics

Industry Applications

JDE/AU Products

AI Services

NEW



OCI Generative AI

NEW



OCI Generative AI Agents



Digital Assistant



Speech



Language



Vision



Document Understanding

ML for data platforms



OCI Data Science



AI in Oracle Database



MySQL HeatWave Vector Store



OCI Data Labeling

Data

AI infrastructure



Compute bare metal instances and VMs



OCI Supercluster with RDMA networking



Block, object, and file storage; HPC filesystems

JD Edwards AI strategy

Enable customers and partners to enhance their JD Edwards processes with Oracle's investments in AI in the areas of **OCI AI/ML services including Generative AI** to accelerate business processes, **improve** user productivity and **aid** in decision making



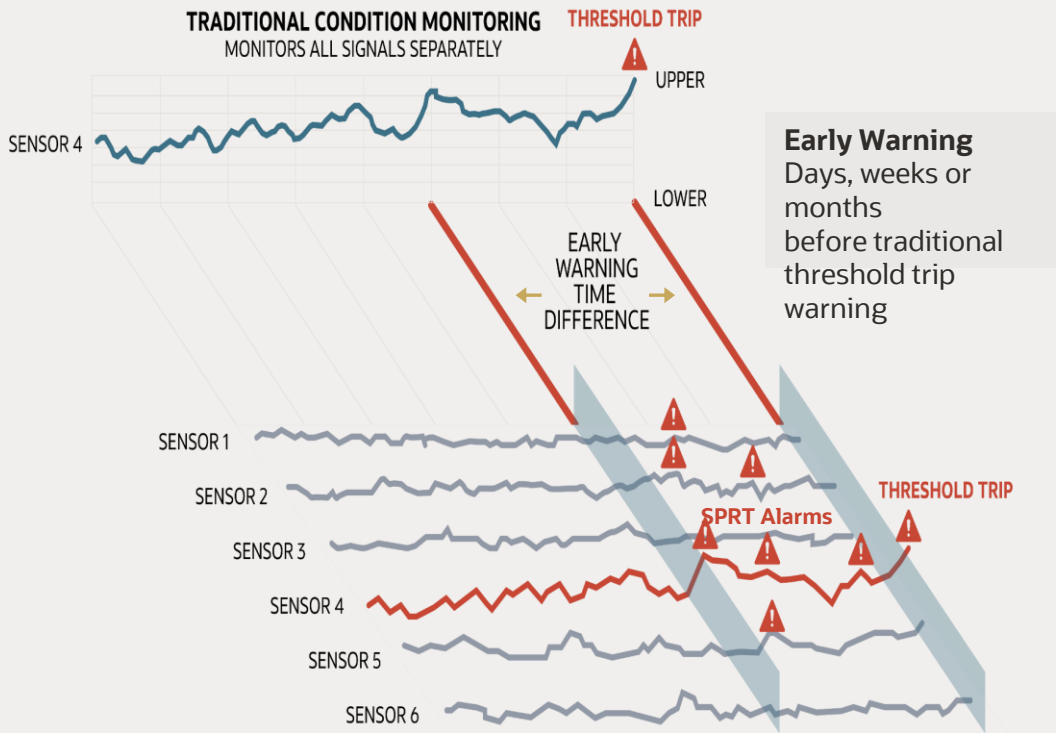
OCI Document Understanding



- Gain pretrained and customizable models to analyze document content
- Deploy text recognition, table detection, document classification, and key-value detection capabilities as needed
- Benefit from fully managed model infrastructure
- Expect complete integration with OCI Data Labeling for simplified data labeling
- Use cases
 - Processing of Invoices/Receipts in Procure to Pay

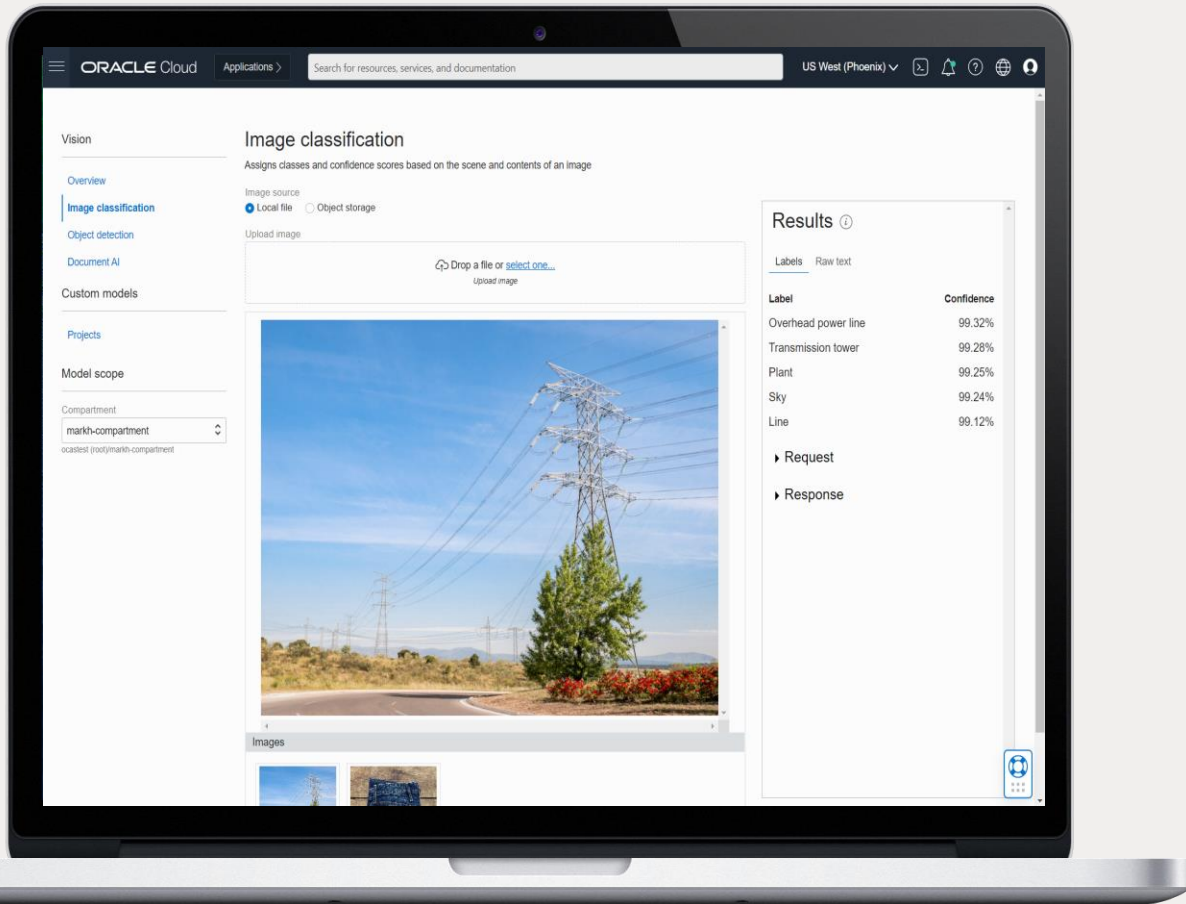


OCI Anomaly Detection



- Builds multiple anomaly detection models and automatically selects the most accurate to flag critical incidents earlier
- Automatically identifies and fixes data quality issues
- Based on industry-leading, proven anomaly detection techniques (MSET-2)
- Detects anomalies that span across multiple sensors to increase accuracy
- Use cases:
 - Asset Monitoring
 - Cost Overruns and changes
 - Shipment delays and Procurement changes
 - Productivity Loss
 - Abnormal consumption or demand

OCI Vision



- Provides pretrained and customizable computer vision models to analyze image-based content
- Fully managed model infrastructure
- Complete integration with OCI Data Labeling simplifies data labeling
- Use cases
 - Identifying parts
 - Product defect identification
 - Inventory management
 - Warehouse location for items
 - Read product blueprints and create BOM
 - Crop Monitoring
 - Waste Management and Pest Control



OCI Generative AI

The screenshot shows the OCI Generative AI console overview page. On the left, there is a navigation menu with options: Overview (selected), Playground, Dedicated AI clusters, Custom models, Endpoints, Scope, and Compartment. The main content area is titled 'Generative AI overview' and features a dark banner with the text: 'Power your apps with large language models and generative AI. OCI Generative AI is a fully managed service that provides a set of state-of-the-art, customizable LLMs that cover a wide range of use cases for text generation. Use the playground to try out the models out-of-the-box or create and host your own fine-tuned custom models based on your own data on dedicated AI clusters.' Below the banner, there are three metrics in colored boxes: 'Dedicated AI clusters' (7), 'Custom models' (3), and 'Active endpoints' (12). To the right of these metrics is a 'Resources' section with links for 'All documentation', 'Rest API reference', 'Workshops', 'Tutorials', and 'Pricing'. Below the metrics is a 'Get started' section with a 'Go to playground' button and a 'Playground' card. The 'Playground' card describes it as a visual interface for exploring hosted pretrained and custom models without writing a single line of code. Below the 'Get started' section are three cards: 'Dedicated AI clusters' (spin up dedicated hardware units for fine-tuning custom models and hosting them), 'Custom models' (create custom models by fine-tuning the base models with your own dataset), and 'Endpoints' (create and manage endpoints to host your custom models).

- High quality pre-built models from Meta and Cohere to meet your business needs with minimal effort
- Customize models to meet your need
- Fully hosted inside OCI. No cross-region or cross-cloud communication
- Private and secure. Oracle does not send customer data to Cohere or Meta.
- Use Cases:
 - Document summarization
 - Information retrieval using Retrieval Augmented Generation (RAG) agents



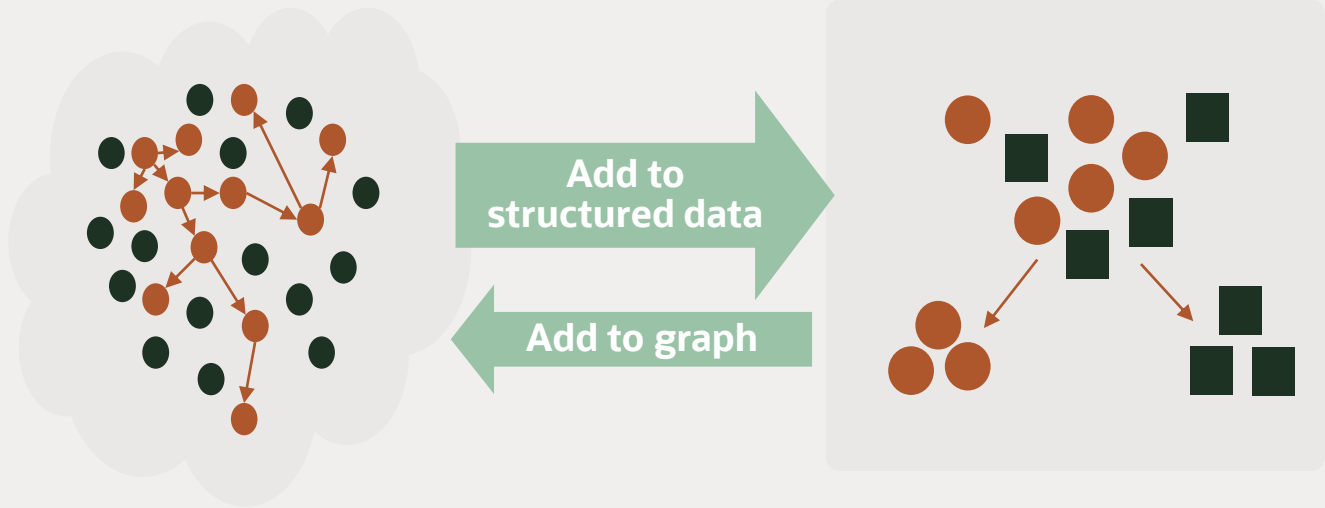
Oracle Property Graph



- Useful for discovering and understanding relationships
- Discover entity relationships and influences
- Work with any information to discover entity relationships and influences
- Perform graph analytics & visualization
- Use data from applications and workflows based on converged Oracle Database
- Use Cases:
 - Achieve higher yields, reduce costs and improve efficiency of production lines
 - Trace process workflows
 - Track delivery times for shipments
 - Identify production bottlenecks



Oracle Graph ML



Compute graph metric(s)
Explore graph or compute
new metrics using ML result

Build predictive model
using graph metric
Build model(s) and score
or classify data

- Built-in algorithms to provide recommendations and predictions
- Use Cases:
 - Recommendations on production improvements



Authentication for Oracle Cloud Infrastructure Services

Use Orchestrator to authenticate to and invoke a wide range of OCI services

Business Problem:

The EnterpriseOne digital platform, and specifically EnterpriseOne Orchestrator, enable the EnterpriseOne system to participate in process automation, integration, and data exchange with external systems and Cloud services, notably Cloud services offered by Oracle Cloud Infrastructure. Of course those integrations must happen securely.

Solution:

This feature extends the supported authentication mechanisms that EnterpriseOne Orchestrator can use to invoke external services provided by Oracle Cloud Infrastructure. Specifically, this feature enables the use of Oracle Cloud Infrastructure API Signature Version 1 to authenticate to services such as Oracle Document Understanding.

New Security option in Connector

The screenshot shows the 'Security' configuration page in the Oracle Cloud Infrastructure Connector. The 'Security Policy' is set to 'OCI API Key-Based Authentication'. The 'OCI Configuration File' field contains the following sample configuration:

```
[DEFAULT]
user=xxx.xxx.xxx..alsjfdjlaksjdfiakjsjfaakjj2lkj32j32lj3lkj3l2jj2j3lj2ljslkajaldajvlkejrejelekjrell
fingerprint=xx:aa:aa:bb:cc:dd:ee:ff:11:22:33:44:55:66:77
tenancy=alskdj:aljkdsf:xxx:yyy:203432482934:aksdjfajsdfjaakdjfakd
region=xx-yyyyy-1
key_file=&path to your privatekeyfile&
# TODO
```

The 'Private Key File Name' field contains 'xxx_vvv_zzz.pem'. A dashed box at the bottom indicates where to drop the private key file.

OCI SDK Authentication Methods

The OCI SDK and CLI supports the following authentication methods:

- API key-based authentication
- Session token-based authentication
- Instance principal
- Resource principal

This section discusses each method in detail and provides examples.

API Key-Based Authentication

In this authentication method, you create a configuration file and store it on the local disk. The configuration file contains details such as the user OCID, tenancy OCID, region, private key path, and fingerprint. This authentication method creates a permanent configuration file on your machine. It should be used if you are working from a secure network and are comfortable storing private keys and configuration locally.

See OCI Documentation:

https://docs.oracle.com/en-us/iaas/Content/API/Concepts/sdk_authentication_methods.htm

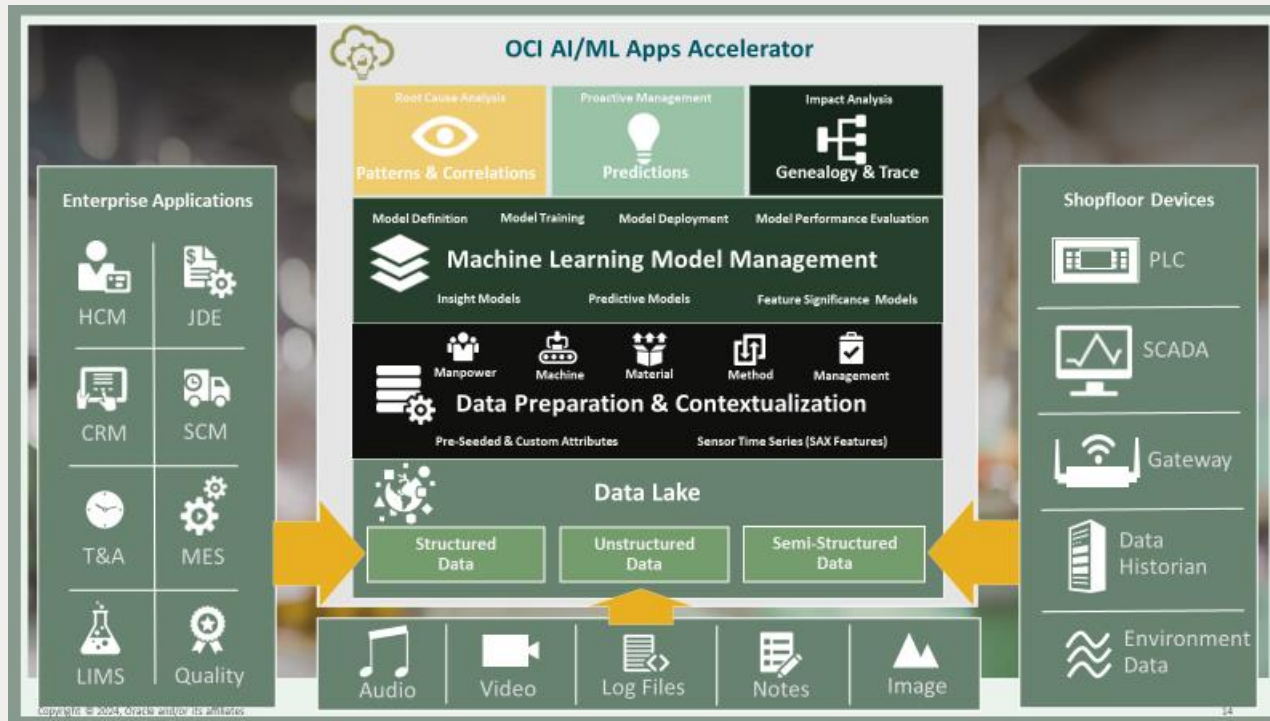
The screenshot shows the 'Infrastructure Services' navigation menu. The services listed are:

- ▶ Service Essentials
- ▶ Access Governance
- ▶ Analytics Cloud
- ▶ Anomaly Detection
- ▶ API Gateway
- ▶ Application Dependency Management
- ▶ Application Performance Monitoring
- ▶ Archive Storage
- ▶ Artifact Registry

Authenticate to and use (orchestrate) a LONG list of OCI REST APIs



OCI AI/ML Accelerator for JD Edwards



- Provides a jump-start to customers looking to leverage AI/ML for solving business challenges
- Identifies patterns and correlations in data
- Pre-built and pre-trained machine learning models
- Accelerator is customizable based on individual use cases
- Sample use case: Root cause analysis of noise levels of Gear Boxes:
<https://www.youtube.com/watch?v=1PFNzhosvXU>



OCI AI/ML Apps Accelerator

<p>Root Cause Analysis</p> <p>Patterns & Correlations</p>	<p>Proactive Management</p> <p>Predictions</p>	<p>Impact Analysis</p> <p>Genealogy & Trace</p>
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Model Definition Model Training Model Deployment Model Performance Evaluation

Machine Learning Model Management

Insight Models Predictive Models Feature Significance Models

Manpower Machine Material Method Management

Data Preparation & Contextualization

Pre-Seeded & Custom Attributes Sensor Time Series (SAX Features)

Data Lake

Structured Data	Unstructured Data	Semi-Structured Data
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Audio	Video	Log Files	Notes	Image
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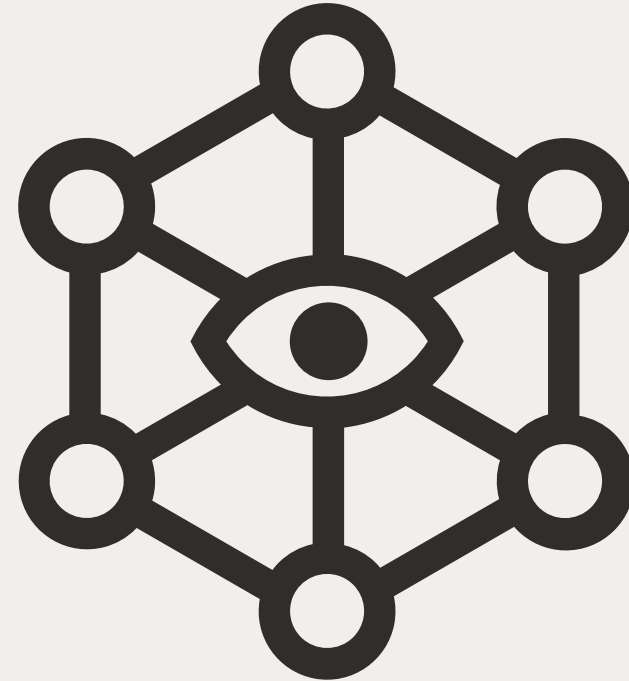
Enterprise Applications

HCM	JDE
CRM	SCM
T&A	MES
LIMS	Quality

Shopfloor Devices

- PLC
- SCADA
- Gateway
- Data Historian
- Environment Data

Oracle AI/ML and JD Edwards: Enabling the next frontier of your innovation



Stay Connected



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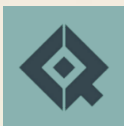
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My Oracle Support



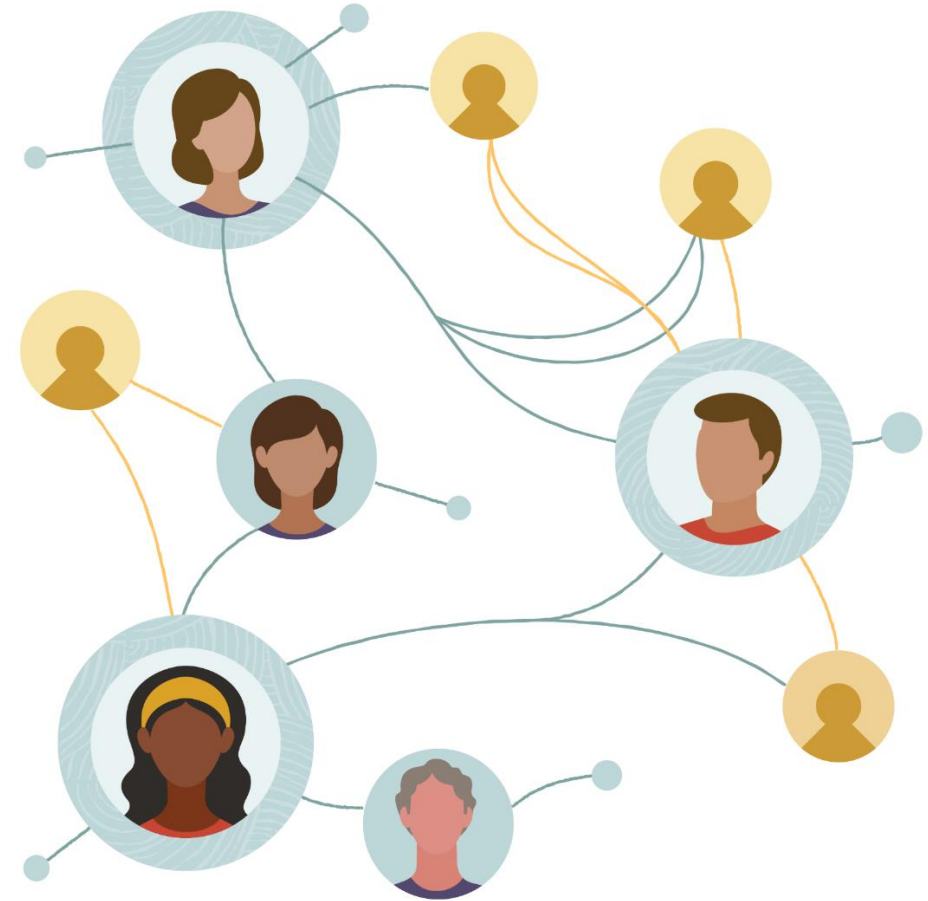
Quest Oracle Community



LearnJDE



The JDE Connection



Thank you

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