

Learnings from the Oracle Cloud Infrastructure Data Science Professional Course

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Course Overview:

Complete ML Environment

learned how OCI provides an integrated ecosystem for data science and machine learning projects. The platform eliminates infrastructure complexity while maintaining enterprise-grade security and scalability.

End-to-End Capabilities

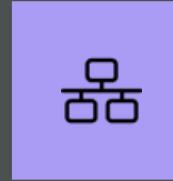
The course taught to manage complete ML lifecycles - from data ingestion and model training to deployment and monitoring - all within OCI's unified environment.

Setting Up My Cloud Foundation



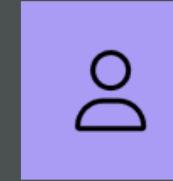
OCI Tenancy Setup

Practiced configuring tenancy settings, understanding compartments, and establishing proper resource organization for data science projects.



Networking & APIs

Learned to configure VCNs, security rules, and authenticate APIs for seamless integration between services and external tools.



JupyterLab Environment

Mastered creating workspaces, launching notebook sessions, and managing Conda environments for different project requirements.

Mastering Workspace Management

01

Project Organization

Practiced structuring data science projects with proper folder hierarchies and resource allocation within OCI workspaces.

02

Environment Control

Learned to create and manage custom Conda environments, ensuring reproducible setups across different experiments and team members.

03

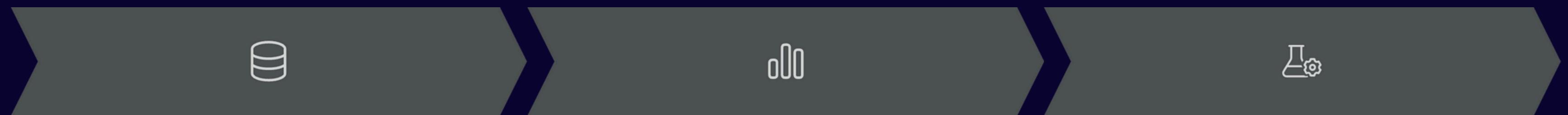
Version Control Integration

Integrated Git repositories seamlessly, enabling collaborative development and proper code versioning for ML projects.



The Complete Machine Learning Pipeline

Explored stages of the ML lifecycle, gaining experience with OCI's comprehensive toolset:



Data Access & Prep

Connected to various data sources and performed preprocessing using OCI's integrated tools and libraries.

Training & AutoML

Implemented both custom algorithms and AutoML solutions for efficient model development and comparison.

Tuning & Evaluation

Performed hyperparameter optimization and comprehensive model evaluation using built-in metrics and visualization tools.

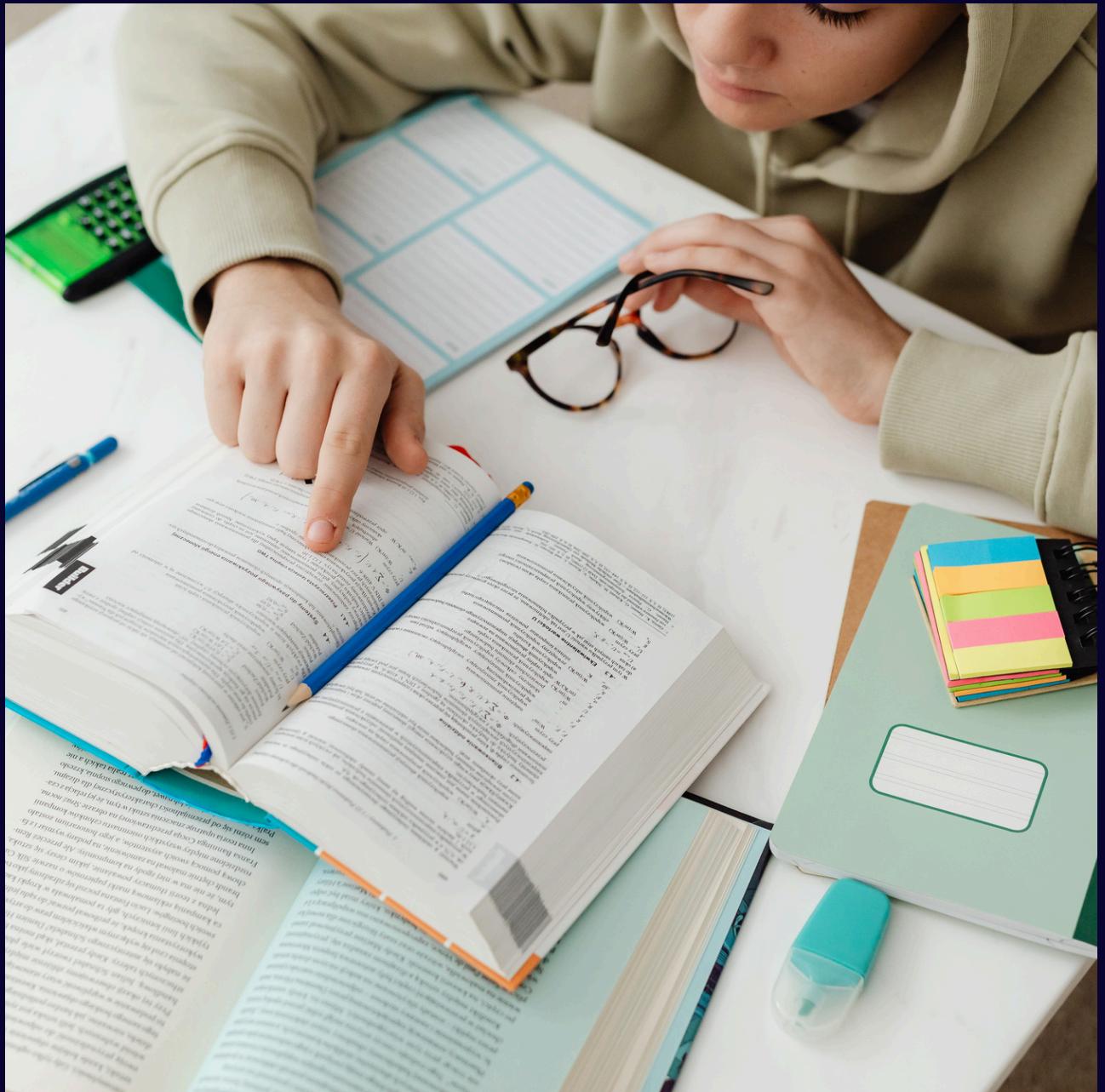
Model Insights and Deployment

Understanding Model Behavior

Learned to generate both global and local explanations for model predictions, crucial for building trust and meeting compliance requirements in enterprise environments.

Production Deployment

Practiced deploying models to OCI's managed endpoints with automatic scaling, monitoring, and version management capabilities.



MLOps Automation Mastery

Data Science Jobs

Learned to create automated workflows that handle training, evaluation, and deployment tasks without manual intervention, ensuring consistent and reliable model updates.

Pipeline Orchestration

Practiced building complex ML pipelines that coordinate multiple steps, from data preprocessing to model deployment, with proper error handling and monitoring.

Scaling and Monitoring

Implemented autoscaling configurations and comprehensive monitoring solutions to ensure deployed models perform optimally under varying load conditions.



Integrating the OCI Ecosystem

Discovered how OCI Data Science seamlessly connects with other cloud services:



OCI Vault

Implemented secure key management for API credentials and sensitive model parameters, following enterprise security best practices.



Object Storage

Managed large datasets and model artifacts efficiently using OCI's scalable object storage with proper lifecycle policies.



Data Flow (Spark)

Processed big data using Apache Spark through OCI Data Flow for large-scale feature engineering and model training.



Data Labeling

Created high-quality labeled datasets using OCI's annotation tools for supervised learning projects.



Key Skills I Developed

Cloud-Native ML Design

Can now architect and implement scalable machine learning solutions that leverage OCI's full service portfolio with confidence and technical precision.

Production MLOps

Understood how to automate model lifecycles, implement CI/CD for ML, and maintain production systems with proper monitoring and governance.

Enterprise Best Practices

Learned to cloud-native approaches to security, scalability, and cost optimization that are essential for enterprise-grade ML deployments.

THANKYOU