



MLOps Foundations on Azure

Operationalize machine learning across your entire business.

Companies are realizing the value of using machine learning (ML) models to drive better outcomes for their businesses. While harnessing the predictive power of their data with ML models to remain competitive is becoming more critical to business operations, 60% of these models never make it to production. Successfully operationalizing AI/ML across the organization delivers a secure, trackable, testable and repeatable way to create, train, deploy and update ML models across different environments.

But to do this, you need a solution that provides a foundation for successful model lifecycle management — one that incorporates data preprocessing, model training, deployment and model monitoring across multiple environments, with strong governance and security controls.

Azure® MLOps Foundations from Rackspace Technology is one such solution. It helps you accelerate operationalizing models in production to achieve the benefits of automated ML lifecycle management by reducing the typical ML lifecycle from 25+ steps to 10 steps, which can lead to a significantly faster delivery time.

Without MLOps Foundations	With MLOps Foundations
<ul style="list-style-type: none"> • The entire lifecycle could take months with 25+ steps between local dev > dev enc > Q/A > production • Manual hand offs between various data teams • Cycles of troubleshooting between data scientist local development and the data engineer development environment 	<ul style="list-style-type: none"> • Lifecycle is reduced to just weeks with 10+ steps • Automated deployment between environments with controlled access to data teams needed for specific steps • One source of truth for experiment tracking, and project packaging for easy source control and reproducibility

Experts Dedicated to Your Success

Rackspace Technology leverages the innovative capabilities of the cloud to help customers build new revenue streams, increase efficiency and deliver incredible experiences. With proven accelerators and Azure-native tools to fast track the automation of your model development lifecycle, Rackspace Technology leverages a wide range of expertise across data migration, data engineering, data science, ML and operations to help turn your data into a tool for innovation.

Key Benefits

The Model Factory Framework is built using Azure data services and open source tools, such as MLFlow and Apache Spark, that enable rapid development, training, scoring and deployment of models. The MLOps Foundations Solution can be tailored to specific workflows and business needs through customization around the model factory framework.

Tools for diagnostics, performance monitoring and addressing model drift:

The Model Factory Framework provides tools for data science teams using Azure-native tools such as Azure Machine Learning services and Azure Databricks to address model drift, model performance for debugging and troubleshooting and pipeline management.

Model explainability for governance and regulatory compliance: Track models, data and parameters in the cases where you need to show auditors that the proper protocols were employed.

About Rackspace Technology®

Rackspace Technology is your trusted partner across cloud, applications, security, data and infrastructure.

- A leader in the 2020 Gartner Magic Quadrant for Public Cloud Infrastructure Professional and Managed Services, Worldwide
- Five-Time Microsoft Partner of the Year
- 2,350+ Microsoft certifications worldwide
- 750+ Microsoft Azure certifications
- Hosting provider for more than half of the Fortune 100
- 20+ years of hosting experience
- Customers in 120+ countries

“The unique aspect of our relationship is expanding all things we’re doing here at Microsoft, it’s all about coming together to deliver the best managed services for the customer globally. We’ve really come together with Rackspace Technology to team up where it counts. We trust Rackspace Technology and deeply value the partnership here at Microsoft.”

Judson Althoff :: Executive VP, WW Commercial Business

Fanatical Experience™

Experts on your side, doing what it takes to get the job done right. From first consultation to daily operations, Rackspace Technology combines the power of always-on service with best-in-class tools and automation to deliver technology when and how you need it.

Platform for collaboration: By combining Azure DevOps tools and processes with Azure ML workflows, teams can work closely together to develop complex models and pipelines, and manage model progression through the different stages of development to production with respective versions, annotations and history.

Accelerated ROI: Expedite operationalizing models in production and realize the benefits of an automated cloud-based machine learning lifecycle management solution built on a pay-for-what-you-use delivery model, complete with tools and services to help you monitor and optimize compute resources.

Standardized model development environment for your data science teams: MLOps Foundations on Azure allows data science and engineering teams to develop models that support any ML framework.

Automated model deployment across development, Q/A and production environments: The Model Factory Framework leverages hyperscale cloud automation to quickly take models from development to deployment, while addressing the production-ready requirements of high availability, scalability, reliability and cost management.

Reproducibility of models and predictions: Track model versions and hyperparameters when deploying to different environments, ensuring model performance in development matches model performance in production.

Key Features

MLOps Foundations on Azure is delivered through a custom engagement. Rackspace Technology will work with you to determine your infrastructure needs and tailor your solution to meet your model development, operations and compliance requirements.

Discovery Session: Rackspace Technology will examine your tooling, machine learning models and cloud landscape to identify areas for improvement and develop a solution design.

Design Decisions: Based upon the discovery session, a detailed design for the Model Factory Framework is created utilizing the tooling that your team is familiar with to decrease the maintenance efforts.

Implementation of the Model Factory Framework: Once a design has been finalized, the team will begin implementing the solution. The Model Factory Framework provides a CI/CD pipeline for your models with a UI to make it easy to deploy and track machine learning models.

Integrate machine learning models: Once the solution has been deployed, Rackspace Technology will help you integrate your models and get them into production.

Comprehensive Azure Capabilities

Azure Expert MSP with expertise across 17 competencies:

- Messaging
- Cloud Productivity
- Collaboration and Content
- Small and Midmarket Cloud Solutions
- Project and Portfolio Management
- Security
- Datacenter
- Data Analytics
- Enterprise Mobility Management
- Business Applications
- Windows and Devices
- DevOps
- Application Development
- Application Integration
- Communications
- Data Platform
- Enterprise Resource Planning

Rackspace Model Factory Framework Features	Machine Learning Model Integration and Pipeline Development
<ul style="list-style-type: none"> • CI/CD integration with automation and orchestration tools • Experiment tracking • Project packaging for easy source control and reproducibility • Register, package, train and deploy models from anywhere • Support for major ML frameworks such as TensorFlow, SCikit-Learn, Spark machine learning, spaCy, PyTorch, etc. • Real-time inference endpoints • Scalable scoring • Model artifact storage • Tracking user interface 	<ul style="list-style-type: none"> • Integration of reproducible ML pipelines • Integration of reusable software environments for training and deploying models • Automated triggering • End-to-end QA test and performance checks • Guidance to team collaboration and best practices

Take the Next Step

Let's talk about how Rackspace Technology machine learning expertise helps you achieve your goals.

Learn more: www.rackspace.com
Call: 1-800-961-2888