MLOps

Machine Learning   **DevOps**   **Data Engineering**

This is communication between data scientists and operations teams. MLOps provides automation of the ML pipeline, merging data scientists and services designed to provide more valuable insights into production systems. It provides reproducibility, transparency, controlled access control, and computing resources for testing, training, and deploying AI algorithms to data engineers, business analysts, and operations teams.

Table of Contents

History Of MLOps

MLOps started as a set of best practices but has gradually evolved into an independent machine learning lifecycle management approach. The challenges of continued use of machine learning in applications were highlighted in a 2015 paper. Expected machine learning growth includes an estimated doubling of ML pilots and implementations from 2017 to 2018 and 2018 to 2020. According to the report, most enterprise AI initiatives (up to 88%) struggle to get through the testing phase. However, companies that have deployed AI and machine learning in the manufacturing industry have seen a 3-15% increase in profit margins.

Simple to complex pipelines

Scalability Issues

What are the challenges Of MLOps?

Production ML Risk

Monitoring of models

Process and Collaboration

MLOps Vs. ModelOps

ModelOps is a superset of MLOps.It provides all the capabilities of MLOps.

	MLOps	ModelOps
	It automates the process of MLworkflow	It helps workflows be operational
	It is only about the operationalization of machine learning models	It is about governance and full life cycle management of AI and ML models
	Aims to create AI-enabled applications by enabling collaborations between different teams	Provide transparency into AI usage using a dashboard, reporting to business leaders
	Primary users are data scientists and ML engineers	Enterprises risk, IT or Line of Business Operations
	Model Management, model monitoring, and CI/CD	MLOps functionality provides insight into the AI model's perform -ance and management of all models, not just ML models.
	Feature in data science platform	Enterprise capability
	Tools: Amazon SageMaker, mlflow, DataRobot, neptune.ai **and more**	Tools: cnvrg.io, CLOUDERA, ModelOp, modzy, SAS
	Focused on Machine Learning Models operationalization	Focused on All AI and decision model operationalization
	Aims to build AI-enabled applications by creating effective collaborative environments for different teams and stakeholders	Aims to Visualize AI usage through dashboards and report back to business leaders.

Why is MLOps important?

Providing value to customers

Rapid further development with machine learning lifecycle management.

You can easily deploy high-precision models anywhere.

Effective management of the entire machine learning life cycle

Introducing a large-scale machine learning model

Easily provide high-precision models in all fields

Reduce risk
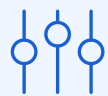
Machine learning resource management system and control

Predict product popularity and use it for product placements.

Best fit Use-cases of MLOps

Development of business use case models.

Provisioning of infrastructure resources needed for the ML lifecycle.

Ensure model security and integrity.

Streamlining the process of taking machine learning models to production

Manage Models better through collaboration

Monitoring the Model Portfolio for Ongoing Performance

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MLOps Implementation

5 Steps you Need to Know to Implement MLOps are

1	2	3	4	5
Integration	> ETL steps	> Version control	> Testing	> Monitoring

Machine Learning Models

Collaboration

Collaboration

ML Orchestration

Continuous Integration/ Development

ML Health

Model Governance

Business Impact

Business Values

Collaboration
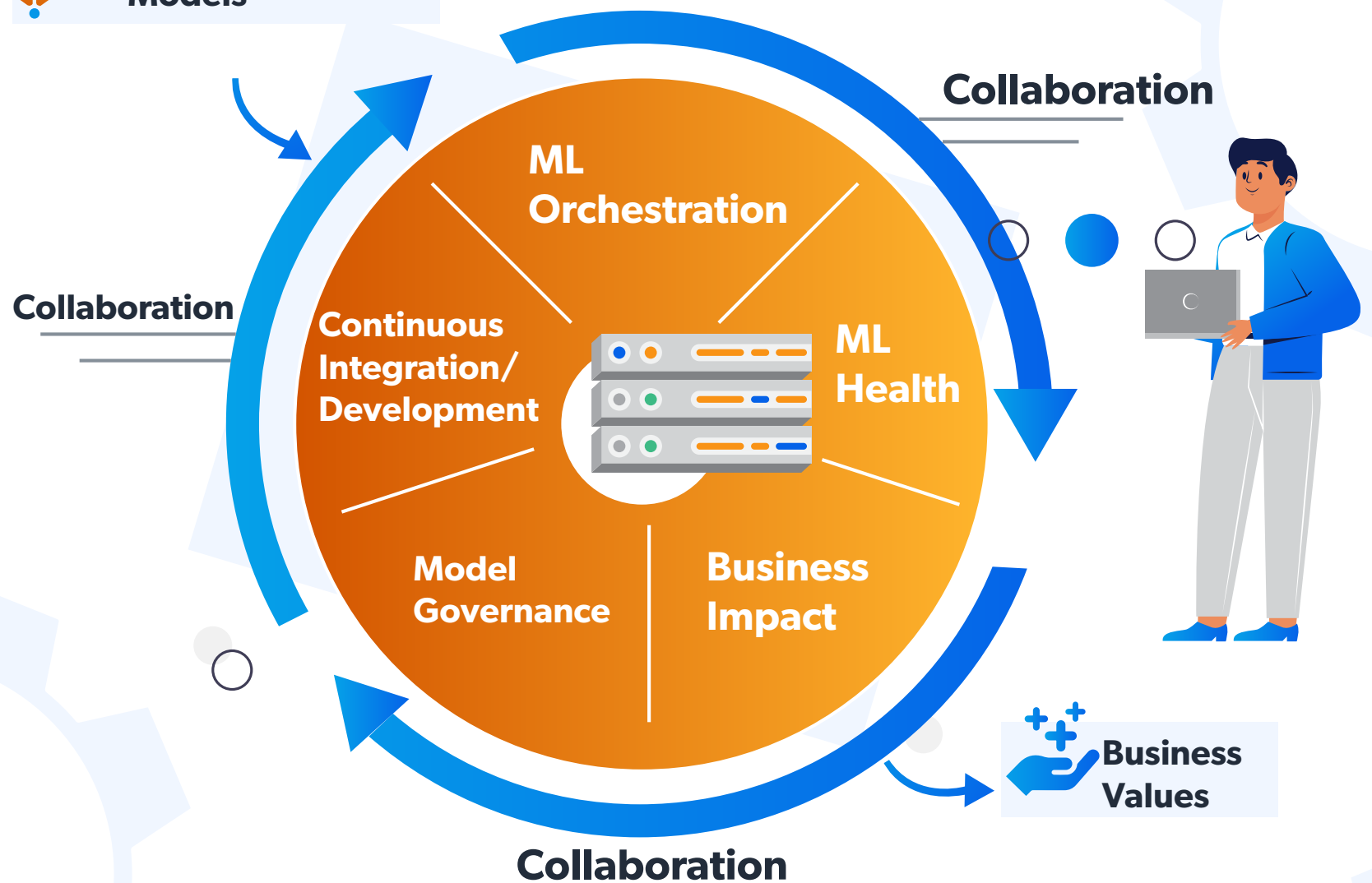
How MLOps adds value to business

How can we help?
The Solution we provide

MLOps-enabled solutions for building, maintaining, and deploying machine learning applications on a large scale.

A fully managed MLOps platform that creates model versions on demand provides model users with version change notifications and the ability to manage model version history.

Enable MLOps solutions to continuously control and manage model usage and metrics, including infrastructure monitoring.

Provides a model catalog of manufactured models and a searchable model marketplace to help users observe multiple model metrics.

Learn how Machine Learning grows with ML research applied to business solutions

Explore now ⚙

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