Microsoft

Microsoft Build

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Managing your ML lifecycle with Azure Databricks and Azure ML

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Machine Learning on Azure

Domain specific pretrained models
To simplify solution development


Vision


Speech


Language


Search

Familiar Data Science tools
To simplify model development


Visual Studio Code


Azure Notebooks

Jupyter


Command line

Popular frameworks
To build advanced deep learning solutions


PyTorch


TensorFlow

Scikit-Learn


ONNX

Productive services
To empower data science and development teams


Azure Machine Learning


Azure Databricks


Machine Learning VMs

Powerful infrastructure
To accelerate deep learning

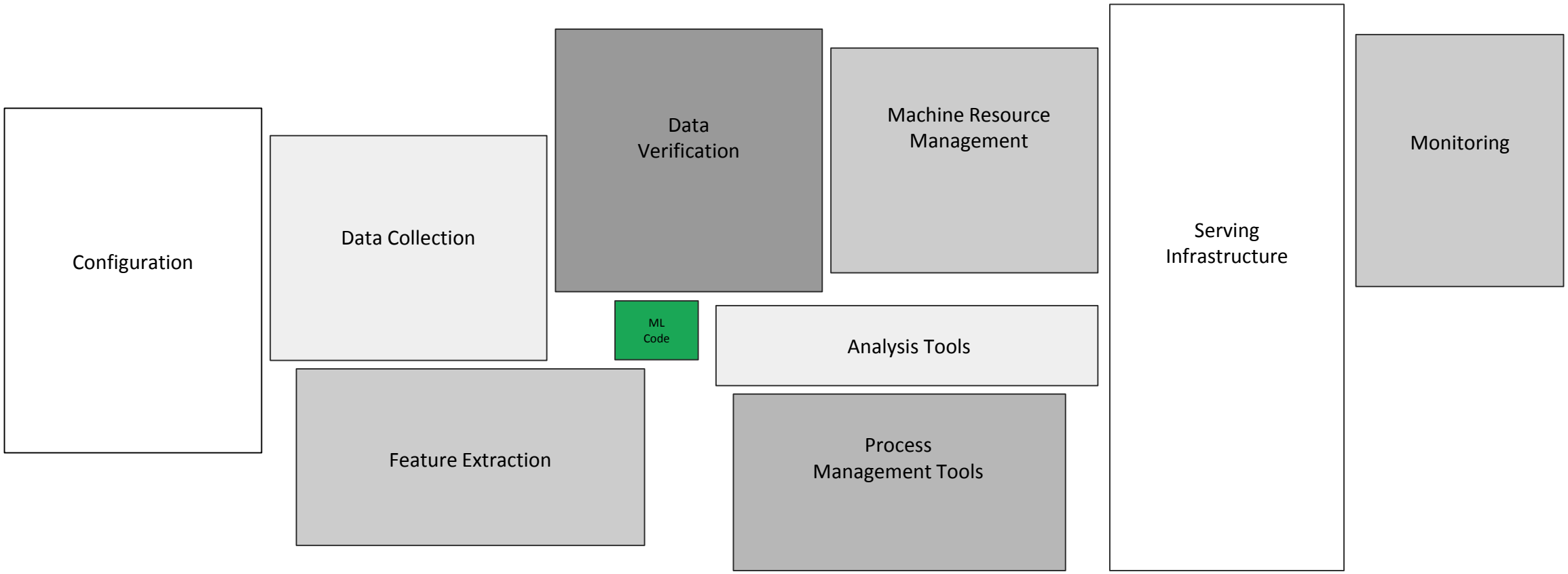

CPU


GPU


FPGA


From the Intelligent Cloud to the Intelligent Edge


Hardest Part of ML isn't ML, it's Data



"Hidden Technical Debt in Machine Learning Systems," Google NIPS 2015

Azure Databricks

Fast, easy, and collaborative Apache Spark™-based analytics platform

Increase productivity

Build on a secure, trusted cloud

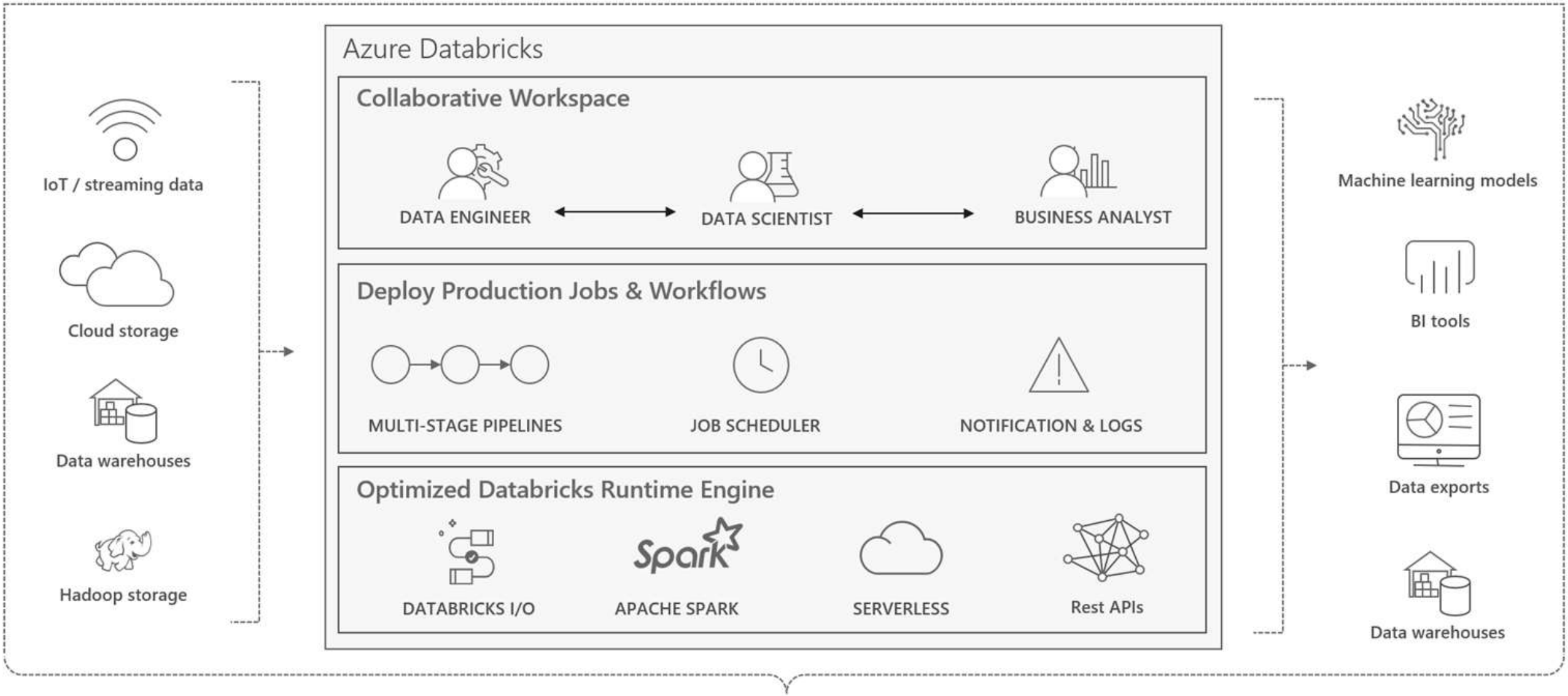
Scale without limits

Built with your needs in mind

- Role-based access controls
- Effortless autoscaling
- Live collaboration
- Enterprise-grade SLAs
- Best-in-class notebooks
- Simple job scheduling

Seamlessly integrated with the Azure Portfolio

Azure Databricks



Enhance Productivity

Build on secure & trusted cloud

Scale without limits

Azure Machine Learning service

Bring AI to everyone with an end-to-end, scalable, trusted platform

Boost your data science productivity

Increase your rate of experimentation

Deploy and manage your models everywhere

Built with your needs in mind

- Automated machine learning
- Managed compute
- DevOps for machine learning
- Simple deployment
- Tool agnostic Python SDK
- Support for open source frameworks

Seamlessly integrated with the Azure Portfolio

ML Lifecycle: Azure Databricks + Azure ML

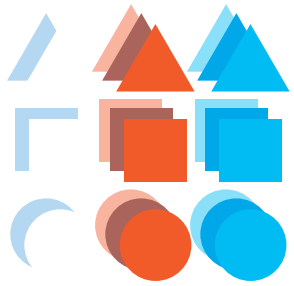
Cosmos DB

Datawarehouse

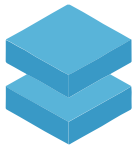
Data lake

Blob storage

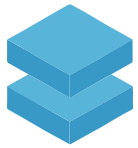
...



Prepare Data



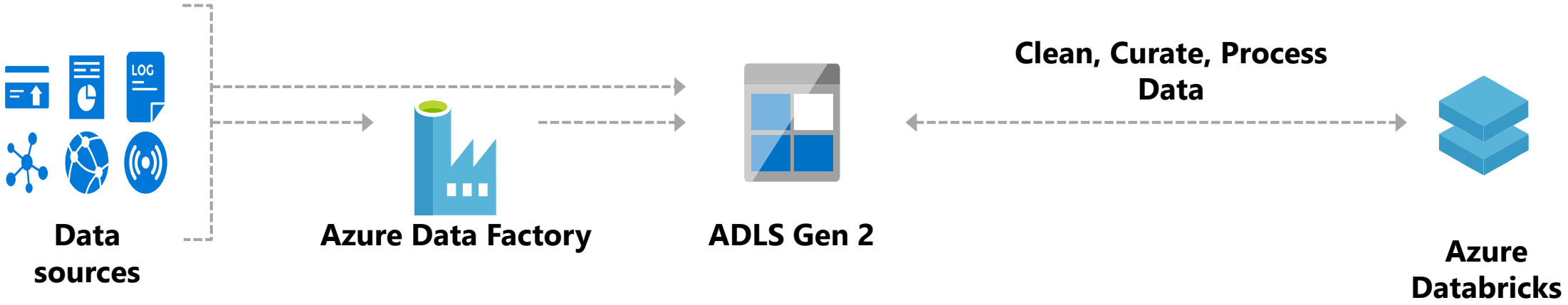
Build & Train



Deploy

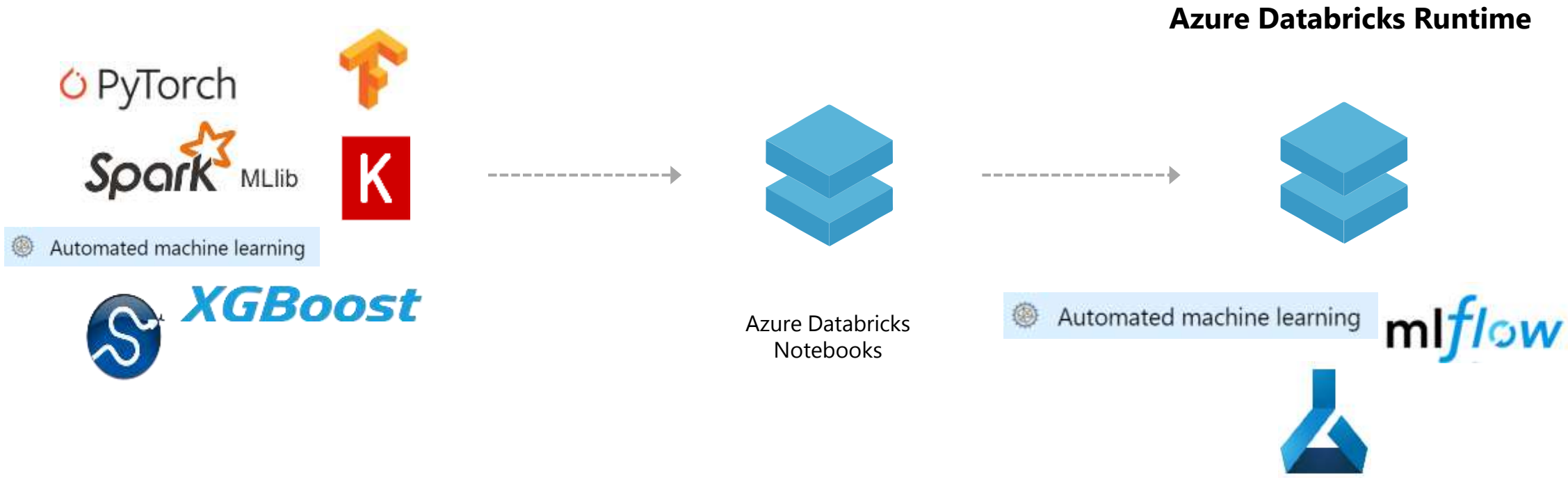
Prepare Data

Prepare Data at Scale



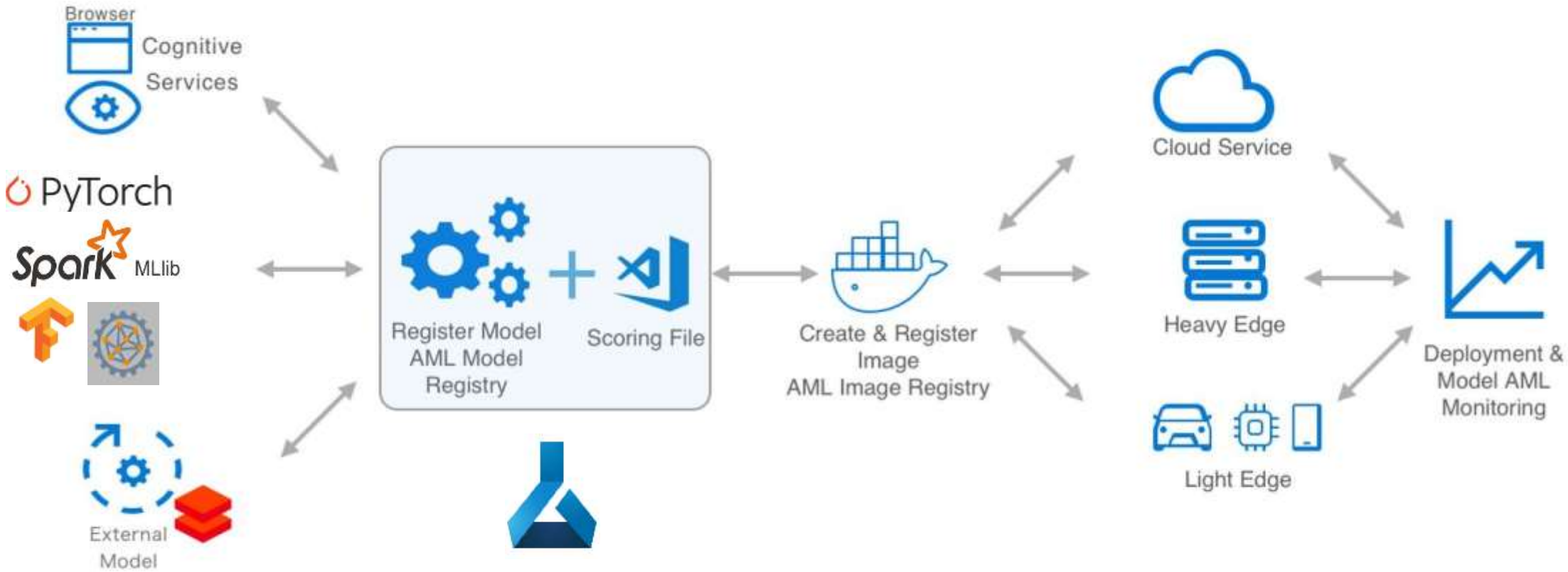
Build and Train

Train and Evaluate ML Models



Deploy

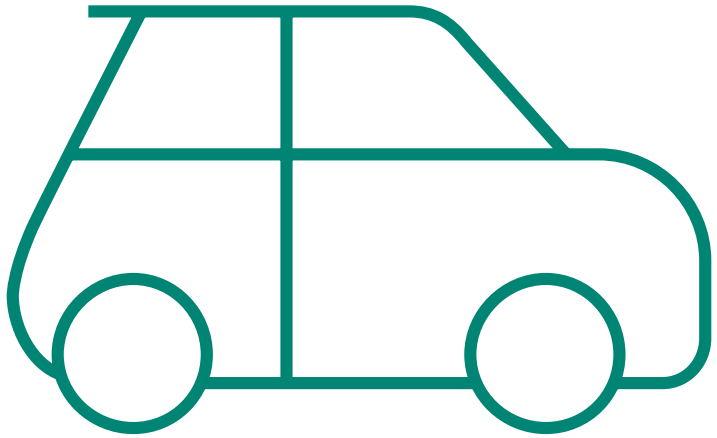
Deploy and Manage ML Models



How can we use automated ML with Azure Databricks?

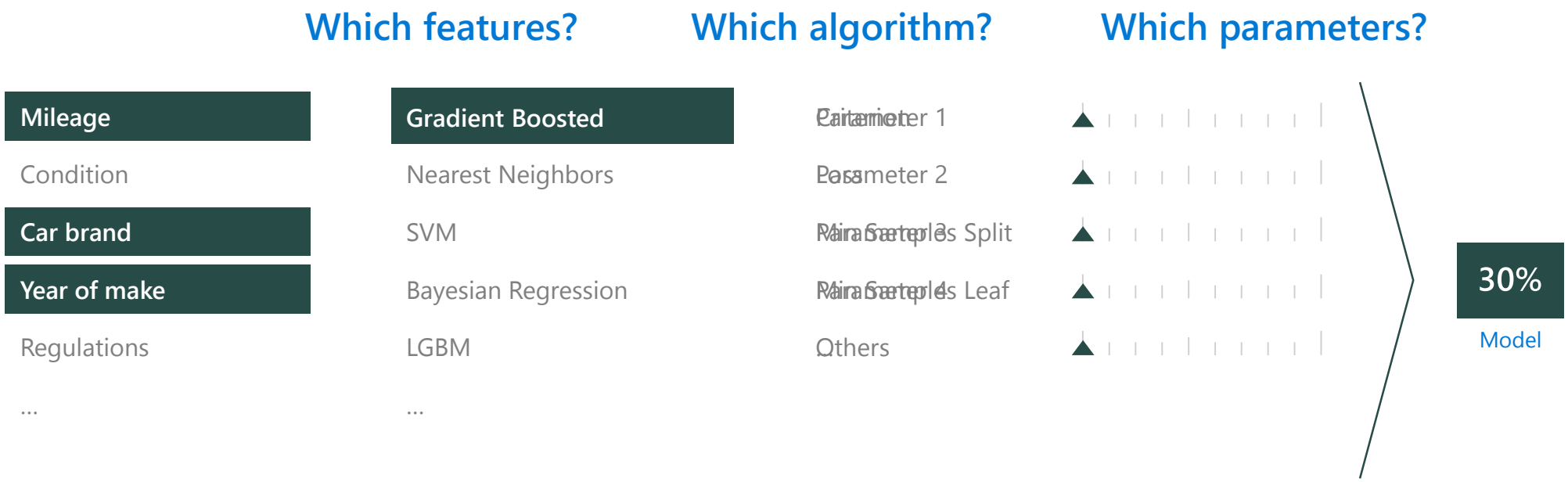
Parashar Shah

Machine Learning Problem Example



How much is this car worth?

Model Creation Is Typically Time-Consuming



Model Creation Is Typically Time-Consuming

Which features?

- Mileage
- Condition
- Car brand
- Year of make
- Regulations
- …

Which algorithm?

- Gradient Boosted
- Nearest Neighbors
- SVM
- Bayesian Regression
- LGBM
- …

Which parameters?

- Number of Neighbors
- Weights
- Metric
- Min Samples Split
- Min Samples Leaf
- Others

30%

Model

Iterate

Model Creation Is Typically Time-Consuming

Which features?

Which algorithm?

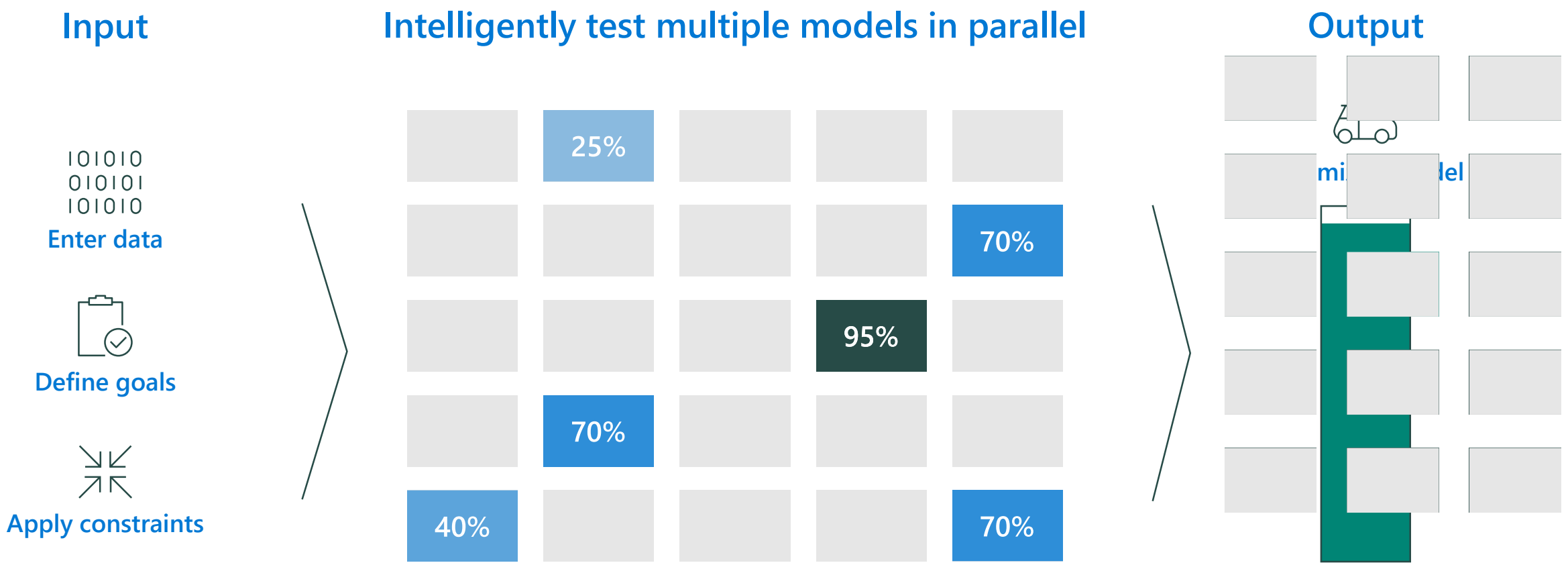
Which parameters?

30%

15%

Iterate

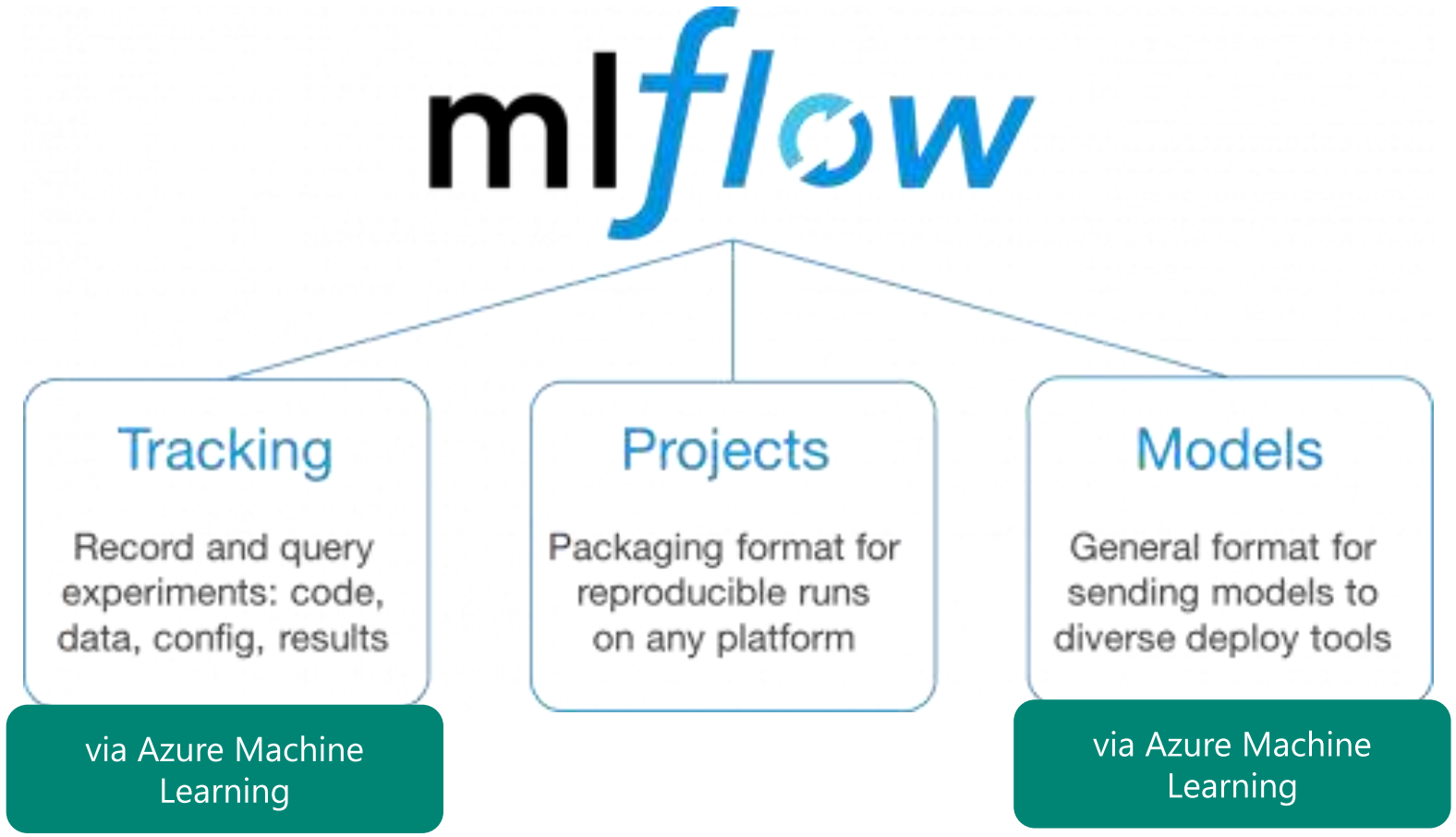
Automated ML to Accelerate Model Development (GA)



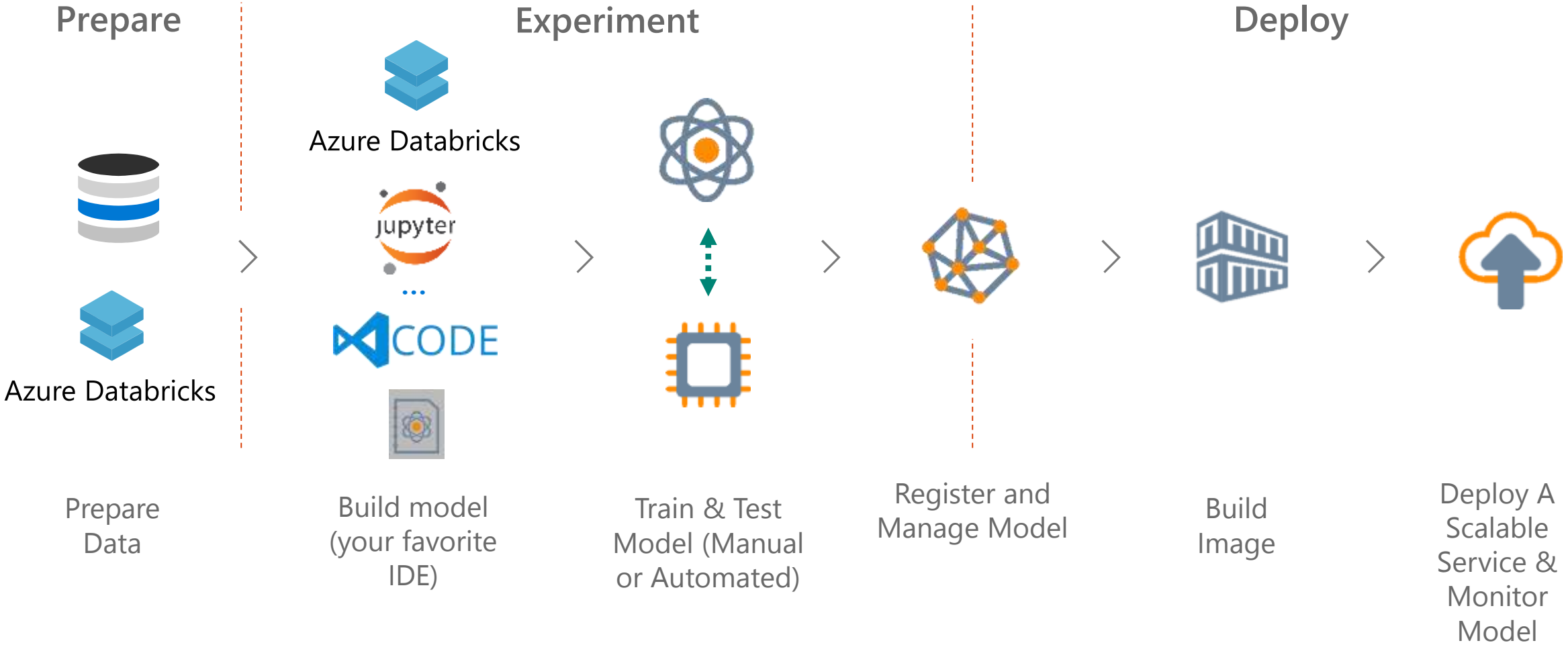
How to use MLflow with Azure ML?

Parashar Shah

MLflow (with Azure ML) [Private Preview]



ML Lifecycle with Azure Databricks and Azure ML (demo summary)



Summary

One Azure ML workspace for all of ML in Azure

Key Updates:

- Automated ML with Azure Databricks 
- MLflow with Azure ML 

- Azure Databricks workspace integrated with Azure ML workspace 

Enroll in Private Preview - https://aka.ms/build-bk3010 for new features

Learn More

Start Free

Build, train, and deploy models with an Azure free account

https://azure.microsoft.com/free

Documentation

Dig into our technical documentation

https://aka.ms/AzureMLDocs

https://docs.azuredatabricks.net/

Give feedback

Tell us what you think, ask for a feature

https://aka.ms/AzureML_feedback

Microsoft

Thank you!

"It is not the answer that enlightens, but the question"

Eugene Ionesco