

# Agenda

## Introduction

- Objective & Goals

## Azure Machine Learning Services

- Overview and Concepts

## Hands-on – AML Components

- Setup workspace and compute
- Register a dataset
- Run automated ML (UI)
- Designer Interface

# 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  
Databricks



Azure Machine  
Learning



Machine  
Learning VMs

## Powerful infrastructure

To accelerate deep learning



CPU



GPU



FPGA

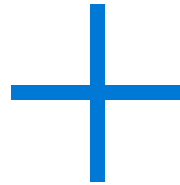


From the Intelligent Cloud to the Intelligent Edge



# Azure Machine Learning

Set of Azure Cloud  
Services



Python  
& R SDK, CLI, UX

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That enables you to:

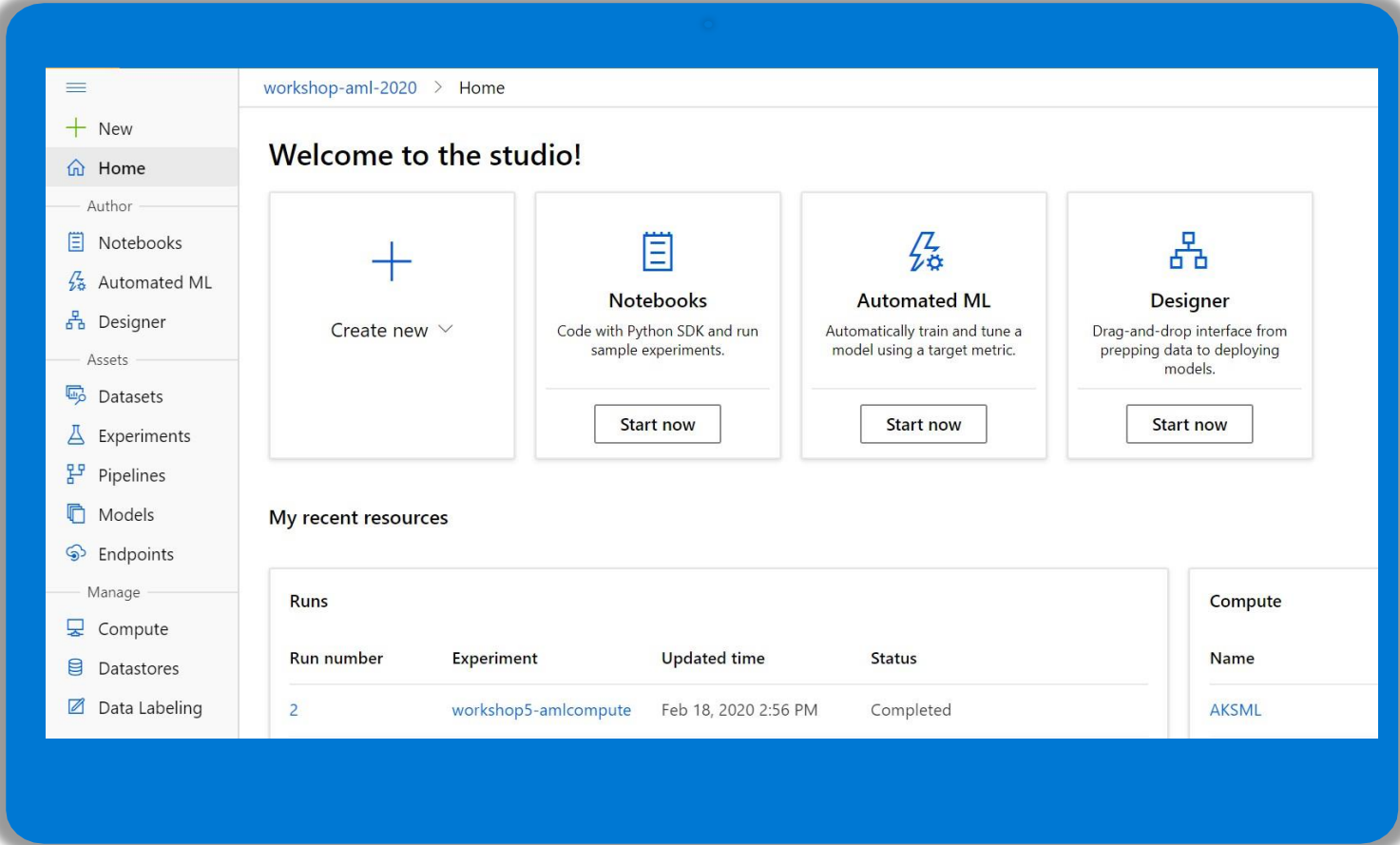
- ✓ Prepare Data
- ✓ Build Models
- ✓ Train Models

- ✓ Manage Models
- ✓ Track Experiments
- ✓ Deploy Models



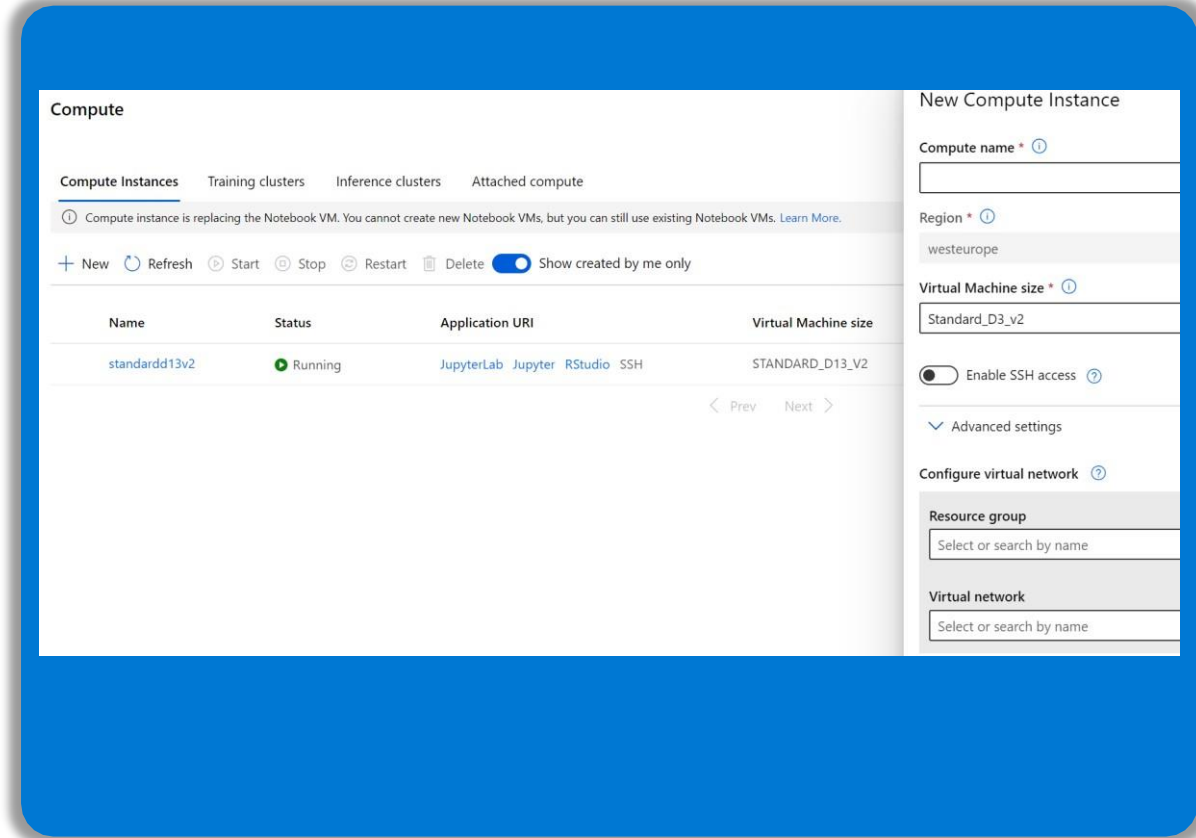
# Azure ML Studio

For all skill levels  
studio web experience



# Machine Learning notebooks

- Fully managed cloud-based solution for data scientists to get started with ML machine learning
- Deeply integrated with Azure ML workspaces and datastores
- First-class experience for model authoring through integrated notebooks using Azure ML Python and R SDK.
- Management and enterprise readiness capabilities for IT administrators.



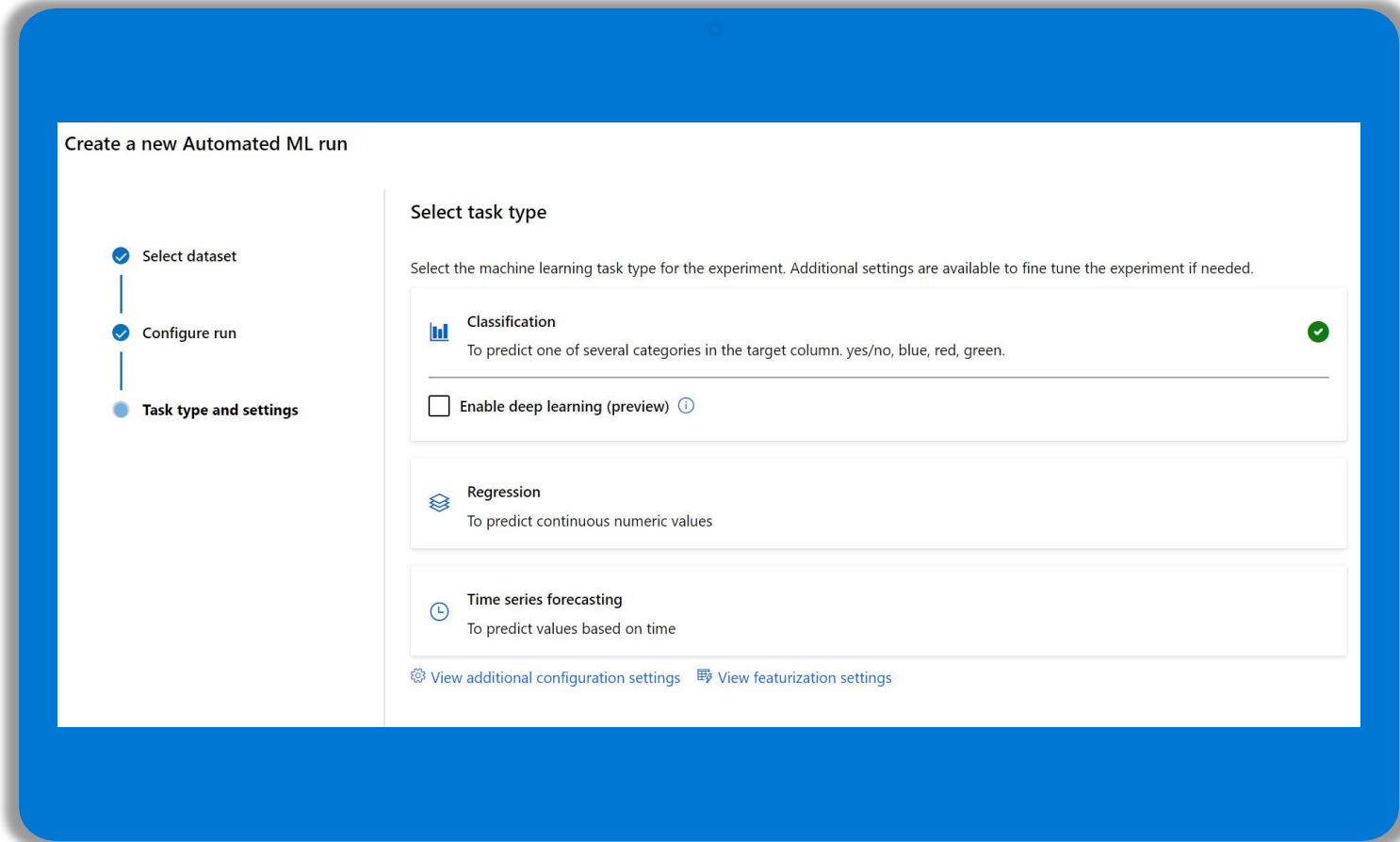
# Automated ML

Automatically build and deploy predictive models using the no-code UI or through a code-first notebooks experience.

Increase productivity with easy data exploration and profiling and with intelligent feature engineering.

Easily create accurate models customized to your data and refined by a wide array of algorithms and hyperparameters.

Build responsible AI solutions with model interpretability, and fine-tune your models to improve accuracy.



The screenshot displays the 'Create a new Automated ML run' interface. On the left, a vertical progress bar indicates three steps: 'Select dataset' (completed with a checkmark), 'Configure run' (completed with a checkmark), and 'Task type and settings' (current step, indicated by a blue dot). The main area is titled 'Select task type' and includes a sub-instruction: 'Select the machine learning task type for the experiment. Additional settings are available to fine tune the experiment if needed.' Three task options are listed: 'Classification' (with a bar chart icon and a green checkmark, description: 'To predict one of several categories in the target column. yes/no, blue, red, green.'), 'Enable deep learning (preview)' (with a checkbox icon and a help icon), 'Regression' (with a stacked bar icon, description: 'To predict continuous numeric values'), and 'Time series forecasting' (with a clock icon, description: 'To predict values based on time'). At the bottom, there are two links: 'View additional configuration settings' and 'View featurization settings'.

Create a new Automated ML run

☒ Select dataset

☒ Configure run

☐ Task type and settings

**Select task type**

Select the machine learning task type for the experiment. Additional settings are available to fine tune the experiment if needed.

☒ **Classification**  
To predict one of several categories in the target column. yes/no, blue, red, green.

☐ Enable deep learning (preview) ⓘ

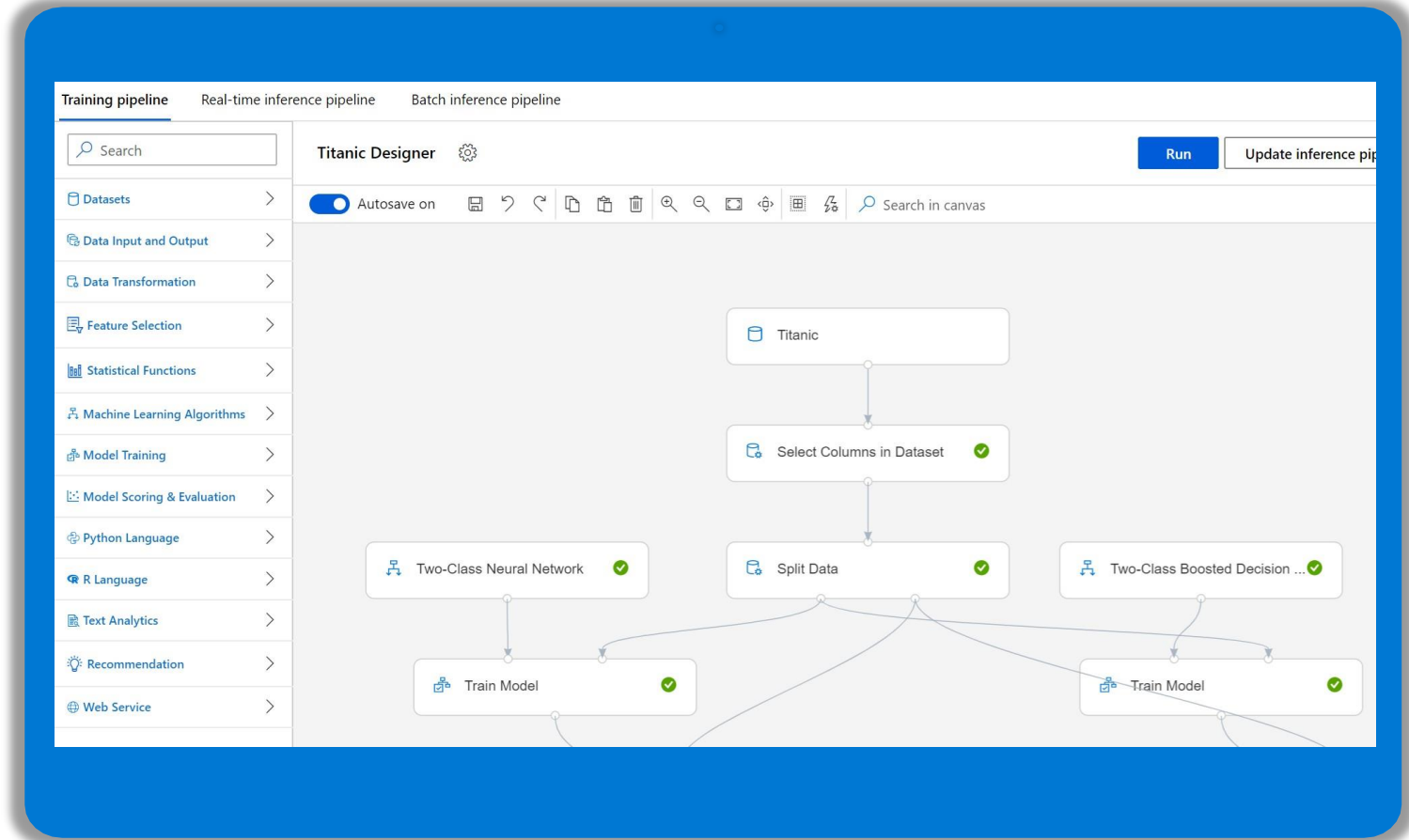
☐ **Regression**  
To predict continuous numeric values

☐ **Time series forecasting**  
To predict values based on time

[⚙️ View additional configuration settings](#) [🔍 View featurization settings](#)

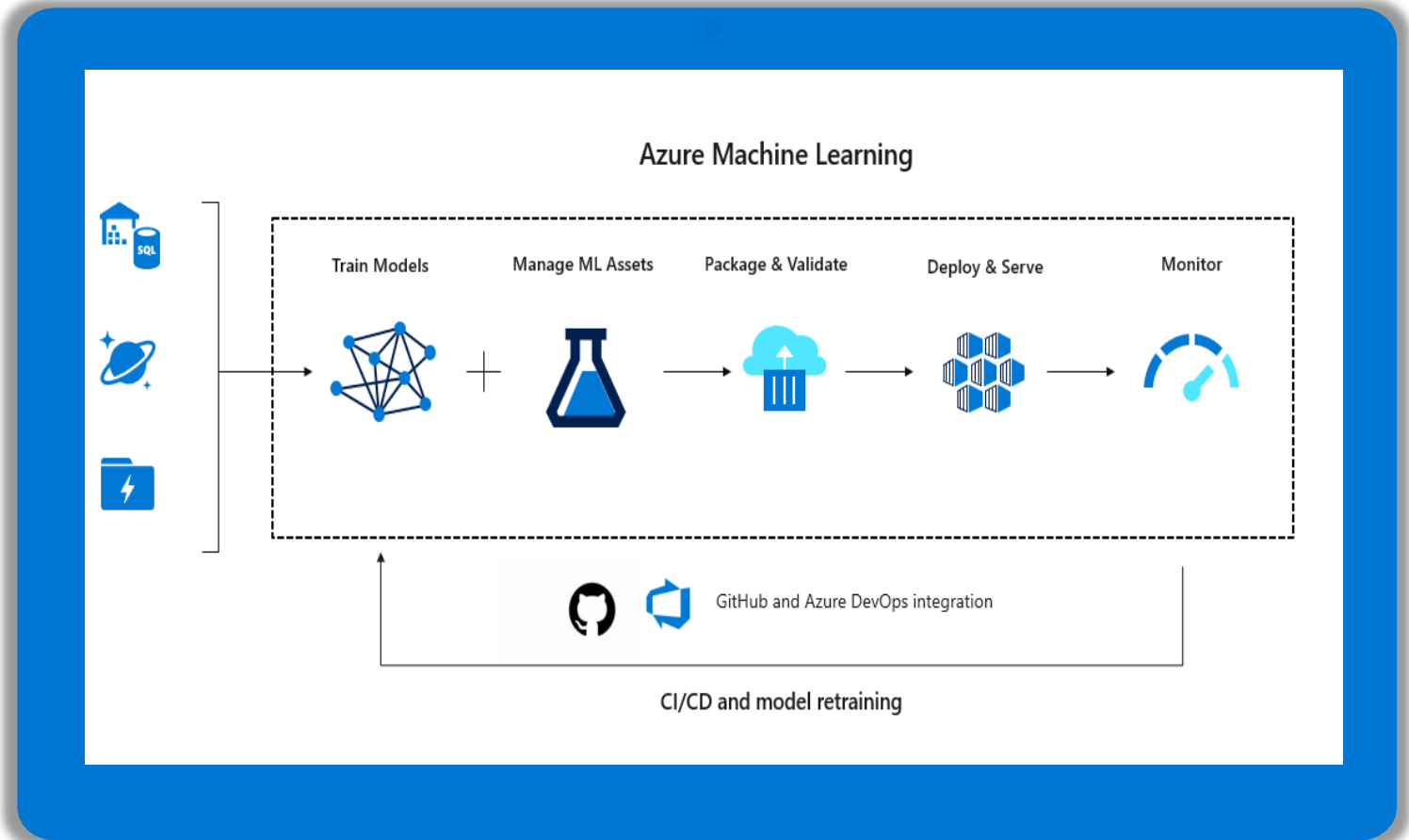
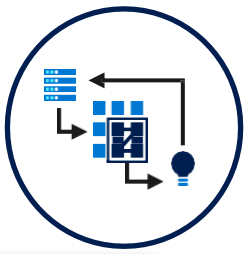
# Designer

- Drag-n-drop workflow capability
- Simplify the process of building, testing, and operating machine learning models
- Create new pipelines



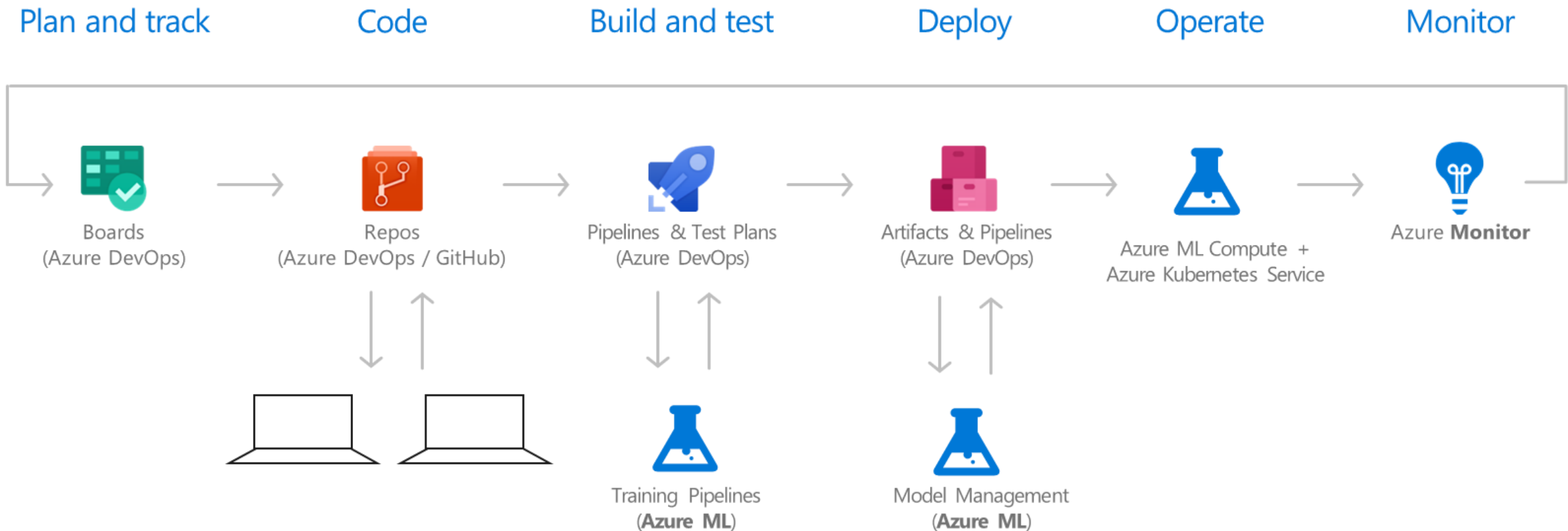
# Azure Machine Learning

Industry leading MLOps

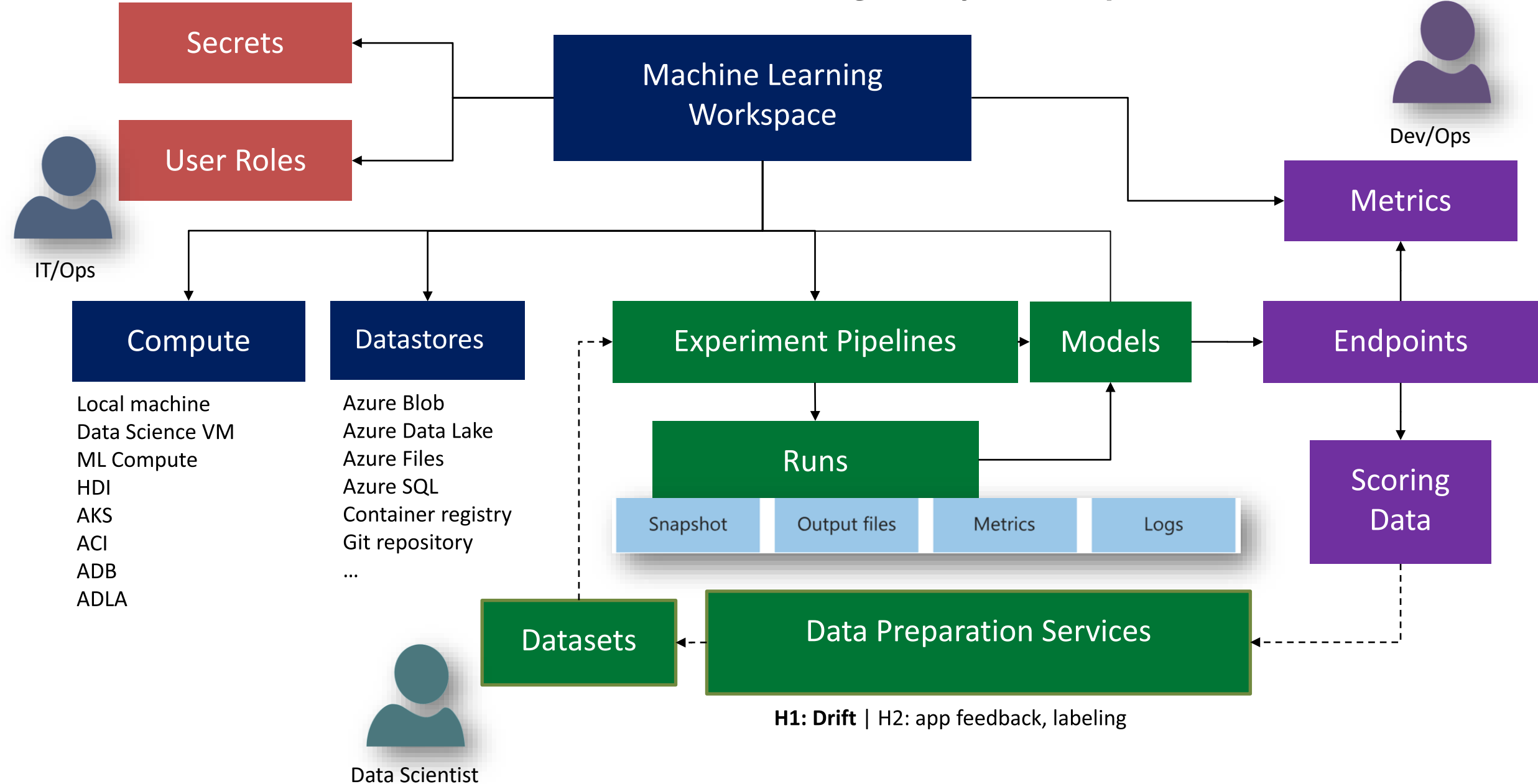




# DevOps Framework for Azure AI Solutions



# Azure Machine Learning – Key Concepts



# Azure ML – The Workspace

**Top-level resource** for the Azure Machine Learning service.

Centralized place to **work with all the artifacts** you create when using Azure Machine Learning service.

**Models are registered** with the workspace.

Each workspace can be shared by multiple people.

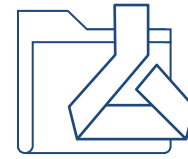
Required resources:

[Azure Container Registry](#)

[Azure Storage](#)

[Azure Application Insights](#)

[Azure Key Vault](#)



## What's in the workspace?



# Use-case

## Key Goals

- Understand the core concepts of Azure ML
- Understand how to use Azure ML in end-to-end scenario
- Serve as a reference for common scenario

## Scenario

Uncover the factors that lead to employee attrition using the fictional data set created by IBM data scientists. The workshop helps you

1. Understand using the Azure Machine Learning Designer to train and deploy a machine learning model that predicts employee attrition
2. Use automated ML to create classification model without writing a single line of code using AML autoML interface
3. End-to-End process from building models to deployment using Python SDK
4. MLOps end-to-end scenario operationalizing ML workflows with Azure Machine Learning, integrated with Azure DevOps.