

Azure Machine Learning in Context

Now that you know a little about the capabilities Azure Machine Learning offers, it can be helpful to understand where those capabilities fit into an overall context for machine learning in Azure. Fundamentally, machine learning is about taking data and using it to train and deliver predictive models that support ML-powered applications.

In Azure, there are many services for storing data, including Azure Storage, Azure Data Lake Store, Azure SQL Database, Azure Cosmos DB, and others. There are also services that you can use to build “big data” processing solutions that transfer and transform data, including Azure Data Factory and Apache Spark engines in Azure HDInsight and Azure Databricks.

Azure also provides a huge array of services you can use to deliver applications for Web, mobile, and IoT devices; including Azure App Service, Azure Functions, and Azure IoT Edge. Azure also offers services for container-based deployment through services like Azure Container Services and Azure Kubernetes Services.

Azure Machine Learning provides a platform for operationalizing the workloads needed to drive the iterative process that enables delivery of machine learning applications built on data. There are three primary types of user that Azure Machine Learning supports in this process:

- Data Scientists, who use their knowledge of statistics and data analytics to conduct analytical experiments and train machine learning models. These users typically work in Python or R, and use frameworks such as Scikit-Learn, PyTorch, and TensorFlow to train machine learning models.
- “Citizen” Data Scientists and App Developers, who don’t primarily work in the field of statistical data analysis, but who need to train machine learning models to support applications. These users can take advantage of graphical tools that abstract the underlying complexity of model training.
- Software engineers and operators, who need to operationalize machine learning to support applications and services. Their tasks typically involve using scripts or automated DevOps processes to manage model retraining and deployment, as well as overall application monitoring and troubleshooting.