Software Development Framework from various software vendors for Data Scientist, AI, Machine Learning Practitioner

Not for a generic framework, but for **software development frameworks (platforms, SDKs, and lifecycles) provided by various software vendors** that Data Scientists, AI, and Machine Learning practitioners can use.

Here's a structured overview:

1. Microsoft

- **Azure Machine Learning (Azure ML)**
  - End-to-end ML lifecycle: data prep → model training → deployment → monitoring.
  - Supports Python SDK, AutoML, MLOps with Azure DevOps.
  - Integrates with Power BI for visualization.
  - Tools: Azure Databricks, Synapse Analytics.

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2. Google

- **Google Vertex AI**
  - Unified ML development platform on Google Cloud.
  - Data engineering with BigQuery ML, training with TensorFlow, PyTorch, scikit-learn.
  - Built-in pipelines for CI/CD + MLOps.
  - AutoML for tabular, NLP, CV.
  - Integration with TensorFlow Extended (TFX).

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3. Amazon Web Services (AWS)

- **Amazon SageMaker**
  - Managed service covering data labeling, feature store, model training, deployment.
  - Supports frameworks: TensorFlow, PyTorch, MXNet, Hugging Face, Scikit-learn.
  - SageMaker Studio for IDE-based development.
  - Built-in MLOps, monitoring, and explainability tools.

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4. IBM

- **IBM Watson Studio**
  - Supports ML/DL model development and deployment.
  - AutoAI for automated model selection/tuning.
  - Integration with Watson Machine Learning for serving models.
  - Supports Python, R, Spark, Jupyter notebooks.
  - Governance & compliance focus.

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5. Databricks

- **Databricks Lakehouse + MLflow**
  - Unified data + AI framework for big data + ML.
  - MLflow for experiment tracking, model registry, deployment.
  - AutoML features + collaborative notebooks.
  - Strong integration with Spark for large-scale data processing.

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6. H2O.ai

- **H2O Driverless AI & H2O-3**
  - AutoML platform for data preprocessing, model training, feature engineering.
  - Open-source ML framework (H2O-3) and enterprise AutoML (Driverless AI).
  - Deployment via MOJO pipelines.
  - Supports Python, R, Java, Scala APIs.

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7. DataRobot

- **DataRobot AI Cloud**
  - AutoML + MLOps framework.
  - Focus on business-friendly AI deployment.
  - End-to-end pipeline from ingestion to monitoring.
  - Multi-cloud & hybrid support.

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8. SAP

- **SAP AI Core / AI Foundation**
  - AI/ML development integrated with SAP business applications.
  - Tools for automation, predictive analytics.
  - Deployment in SAP ecosystem (ERP, S/4HANA, etc.).

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9. Oracle

- **Oracle AI Services & Oracle Machine Learning (OML)**
  - AI and ML frameworks integrated with Oracle Autonomous Database.
  - SQL-based machine learning (in-database ML).
  - Python/R APIs available.
  - Supports deployment via Oracle Cloud Infrastructure (OCI).

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10. NVIDIA

- **NVIDIA AI Enterprise & RAPIDS AI**
  - GPU-accelerated ML/DL development.
  - RAPIDS: GPU-based Pandas, Scikit-learn equivalents.
  - Pre-trained models + SDKs (NVIDIA TAO Toolkit, DeepStream for CV).
  - Deployed in hybrid cloud or edge environments.

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11. Open-Source / Community Driven Vendors

- **Apache Spark MLlib** (big data ML framework).
- **TensorFlow Extended (TFX)** by Google (production ML pipelines).
- **PyTorch Lightning** (structured PyTorch development).
- **KubeFlow** (Kubernetes-native ML pipelines).

✅ In short:

- **Cloud Vendors (Microsoft, Google, AWS, IBM, Oracle, SAP)** → end-to-end ML frameworks.
- **AI/ML Specialists (Databricks, H2O.ai, DataRobot, NVIDIA)** → optimized frameworks for scale, automation, or performance.
- **Open Source Vendors** → flexible, community-driven frameworks.