

**Machine Learning**

Framework	Platform	Library
Accord.NET, Microsoft Azure ML, Hugging Face CANDLE, Microsoft LightGBM, MAHOUI, ML.NET, RAY, ZenML	Angel (Graduated), ForestFlow (Incubating), Open Platform for Enterprise AI (Sandbox), Ax, cortex, H2O, KubeFlow, METAFLOW, mlflow, PredictionIO, SELDOM, VONPAL MARKET	1ML (Sandbox), DeepCausality (Sandbox), IREE (Sandbox), Recommenders (Sandbox), Sapient ML (Sandbox), AutoGluon, CatBoost, Flashlight, MediaPipe, mlpack, OpenCV, opennlp, CARET, Legato, 將軍 Shogun, Sonnet, Salesforce Transmogrid, dmlc XGBoost, xLearn

**Deep Learning**

Framework	Platform	Library	Tool
DeepRec (Sandbox), ShaderNN (Sandbox)	TONY (Incubating)	BigDL, Catalyst, DL4J, fast.ai, Keras, PyTorch Ignite, PyTorch Lightning, PyTorch Video	BeyondML (Sandbox), BoTorch, intel Distiller, ploidML, PyTorch Lightning, PyTorch

**Programming**

Programming	Reinforcement Learning
Pyro (Graduated), Kompute (Incubating), DASK, Intel.NET, Julia, MARS, Numba, NumPy, NYOKA, primegrate, PyMC3, python, R, SciPy, SKIP, Stan	CleanRL, Coach, DeepMindLab, Dopamine, Horizon, OpenAI, Google PlaNet, Google SEED RL, State Baselines

**Data**

Education	Lineage	Relational DB	Store & Format	Versioning	Operations	Feature Engineering	Stream Processing	SQL Engine	Visualization	Pipeline Management	Labeling & Annotation	Governance
DATA PRACTICES.ORG (Incubating), OpenDS4All (Incubating)	OpenLineage (Graduated), OpenBytes (Sandbox), Open Dataology (Sandbox)	CouchDB, MySQL, KV	docarray (Graduated), Milvus (Graduated), DELTA LAKE (Incubating), JanusGraph (Incubating), LakeSoul (Sandbox), ALLUXIO, ICEBERG, ORC, ARROW, XARROW, CEPH, Dragonfly, druid, hudi, HugeGraph, influxdb, pandas, Parquet, pilosa, StarRocks, Valid, VEARCH, vespa, Vineyard	datascience connect, DVC, datashim (Incubating), Quilt, Mathesar, snorkel, WHYLABS whylogs	MARQUEZ (Graduated), Amundsen (Incubating), datashim (Incubating), Mathesar, snorkel, WHYLABS whylogs	FEAST (Incubating), feathr (Sandbox), Featuretools, OpenMLDB, tsfresh	NNStreamer (Incubating), RocketMQ, beam, brooklin, Flink, fluentd, kafka, logstash, Pravega, PREFECT, PULSAR, samza, Uber uReplicator	ARCTIC DRILL, HAWQ, presto, SQLFlow, trino, bakeh, plotly Dash, Uber deck-gi, Ecco, Google Facets, Grafana, Metabase, Prometheus, RCloud, re-dash, NYU, Superset, Google	Artigraph (Sandbox), Intel Analytics Zoo, DAGSTER, PIFlow, Xtreml (Sandbox), CVAT, Doccano, Labelbox, Labelimg, HITACHI Inspire the Spark, Microsoft WAT	EGERIA (Graduated), Bitol (Sandbox), Xtreml (Sandbox), CVAT, Doccano, Labelbox, Labelimg, HITACHI Inspire the Spark, Microsoft WAT	Unity Catalog (Sandbox)	

**Model**

Inference	Federated Learning	Training	Parameter	Format & Interface	Marketplace	Workflow	Benchmarking	Tool	Data
ADLIX (Incubating), KServe (Incubating), CausalML, MNN, NVIDIA TensorRT, NVIDIA, uTensor, VLLM	FATE (Incubating), Substra (Incubating), OPENFL (Sandbox), PySyft, TensorFlow Federated	PROBOD (Graduated), LEUWIG (Incubating), deepspeed, DLROver, Microsoft, Petastorm, TorchRec	HYPERBOLT, KATIB, talos	ONNX (Graduated), Uber NeuroPod, Microsoft	Machine Learning Exchange (Sandbox), Acumos (Archived), IBM	Flyte (Graduated), kedro (Incubating), argo, Azkaban, BENTONL, Cadence, Couler, CYCLOPS, DataBolt, kestra, Spotify ligi, mLeap, Orchest, PREFECT, TRAINS	DAWN Bench, MLPerf, FlagAI (Sandbox), Quicoma AIMET, FLAML, Microsoft MMLoss, Amazon MMS, MDB, Amazon Neo-AI, Google, AWS TorchServe, turti	FACEBOOK, AWS, PipelineAI, RWK (Incubating)	

**Distributed Computing**

Computing & Management	Interface	Security & Privacy	Natural Language Processing	Notebook Environment	Trusted & Responsible AI	Explainability	Adversarial	Bias & Fairness
EDL (Incubating), SOAJS (Incubating), Bahir, MESOS, Apache Ranger, SPARK, STORM, GNS3, NETFLIX genie, GraphScope, kubernetes, intel Nauta, OPENSIFT, Singularity	OPEN VOICE INTEROPERABILITY (Incubating), sparklyr (Incubating), APACHE TORE, LVVY	Google Differential Privacy, IBM HEIB, Microsoft SEAL, Google TensorFlow Privacy, TFEncrypted	DELTA (Incubating), ROSAENLG (Sandbox), Google ALBERT, AllenNLP, flair, LUON, haystack, Kashgari, FACEBOOK LASER, RASA, spaCy, intel NLP Architect, NLP, ParIAI, FACEBOOK PyTorch, RASA, spaCy, Microsoft Transformers, FACEBOOK XLM, YouTokenToMe	Elyra (Sandbox), colab, BeakerX, IP[y]: IPython, jupyter, PolyNote, Stencil, Streamlit	AI Explainability 360 (Incubating), ELIS, Google Lucid, Bolt, ALIBI, Captum, Microsoft HuggingFace Lime, SHAP, SKATER, trulens	Adversarial Robustness Toolbox (Graduated), AdvBox, cover torch, cleverhans, University of Washington Footbox	AI Fairness 360 (Incubating), Intersectional Fairness (Sandbox), OPEN VOICE TRUSTMARK (Incubating), Aequitas (Bias & Fairness Audit), Audit AI, Stanford University, Fairlearn	