

Machine Learning

Framework	Platform	Library
<ul style="list-style-type: none"> Accord.NET Microsoft LightGBM MAHOUT ML.NET RAY ZenML 	<ul style="list-style-type: none"> Angel ForestFlow Alibaba Alink Apache SystemML Graduated: Ax, cortex Incubating: H2O, Kubeflow, MEADFLOW Sandbox: mlflow, PredictionIO, SELDOVI, YOMPIL MARKET 	<ul style="list-style-type: none"> 1ML AutoGluon CatBoost Flashlight MediaPipe mipack Levens OpenCV openim CARET Learn 將軍 Shogun Sonnet Salesforce TransmogriAI dmk XGBoost xLearn

Deep Learning

Framework	Platform	Library	Tool
<ul style="list-style-type: none"> SINGA Chainer Microsoft CNTK ay/net Alibaba euler [M]^s MindSpore mxnet ncnn fjs 飞龙 Pythia PYTORCH TensorFlow 	<ul style="list-style-type: none"> TUW Incubating: DeepDetect, Determined AI, jino, Onepanel, Polyaxon 	<ul style="list-style-type: none"> BigDL Catalyst DL4J fast.ai Keras PyTorch Lightning PyTorchVideo 	<ul style="list-style-type: none"> BeyondML Sandbox: BoTorch, intel Distiller, ploidML, PyTorch projects, tvn

Reinforcement Learning

Reinforcement Learning
<ul style="list-style-type: none"> Chainer RL CleanRL Coach DeepMind Lab Dopamine Horizon OpenAI Google PlaNet Google SEED RL Stable Baselines

Programming

Programming
<ul style="list-style-type: none"> Pyro Kompute DASK Infer.NET Graduated: Numba, NumPy, NYOKA, primegranite, PyMC3, python Incubating: julia, MARS Sandbox: R, SciPy, SKIP, Stan

Data

Education	Lineage	Relational DB	Store & Format	Versioning	Operations	Feature Engineering	Stream Processing	SQL Engine	Visualization	Pipeline Management	Labeling & Annotation	Governance
<ul style="list-style-type: none"> DATA PRACTICES.ORG Incubating OpenDS4All Incubating 	<ul style="list-style-type: none"> OpenBytes Sandbox Open Dataology Sandbox OpenLineage Sandbox 	<ul style="list-style-type: none"> CouchDB MySQL KV 	<ul style="list-style-type: none"> Milvus JanusGraph docarray Graduated: ALLUXIO, ICEBERG, ORC, ARESDB, ARROW, XARROW Incubating: CEPH, DELTA LAKE, druid, hudi, HugeGraph, influxdb Sandbox: pandas, Parquet, pilosa, VEARCH, vespa, Vineyard 	<ul style="list-style-type: none"> datascience dashboard DVC ouilt 	<ul style="list-style-type: none"> Amundsen datashim Incubating Incubating MARQUEZ HIVE ckan Data Hub snortel WHYLABS whylogs 	<ul style="list-style-type: none"> FEAST feathr Incubating Sandbox Featuretools OpenMLDS tsfresh 	<ul style="list-style-type: none"> NNStreamer Incubating Flink fluentd kafka logstash Pravega PREFECT PULSAR samza Uber uReplicator 	<ul style="list-style-type: none"> APACHE DRILL HAWO SQLFlow trino 	<ul style="list-style-type: none"> bakeh IBM Carbon Design System plotly Dash Uber deck.gl Ecco Google Facets Grafana Metabase Prometheus RCloud re dash NYU seibon Superset Google TensorBoard 	<ul style="list-style-type: none"> Artigraph Sandbox intel Analytics Zoo DAGSTER PIFlow TEKTON TPOT 	<ul style="list-style-type: none"> intel CVAT Doccano Labelbox LabelImg HITACHI Inspire the Next Microsoft VOT 	<ul style="list-style-type: none"> EGERIA Graduated IBM OPEN SOURCE LICENSE AGREEMENT

Model

Inference	Federated Learning	Training	Parameter Format & Interface	Marketplace	Workflow	Benchmarking	Tool	Explainability	Adversarial	Bias & Fairness
<ul style="list-style-type: none"> ADUIK KServe Incubating Incubating CavaML MNN NVIDIA TensorRT NVIDIA TensorRT Inference Server uTensor 	<ul style="list-style-type: none"> FATE Substra Incubating Incubating intel OpenFL PySyft TensorFlow Federated 	<ul style="list-style-type: none"> ROBOVIO LEWDIG Graduated Incubating Microsoft Research Learning Library Petastorm TorchRec 	<ul style="list-style-type: none"> HYPERSCRIPT Katib talos Uber NeuroPod 	<ul style="list-style-type: none"> Machine Learning exchange Acumos Archived IBM 	<ul style="list-style-type: none"> Flyte Kedro Incubating Sandbox Airflow nifi argo Azaban BENTOML Cadence Couler CYCLONE DataBolt kestra Spotify luigi mleap Orchest PREFECT TRAINS volcano 	<ul style="list-style-type: none"> DAWN Bench MLPerf 	<ul style="list-style-type: none"> FlagAI 飞智 Sandbox Qualcomm AIMET FACEBOOK dlm FLAML Microsoft MMS amazon MDB amazon Neo-AI NETR@N ONNX RUNTIME PipelineAI studio.ml Google AWS Turi TorchServe 	<ul style="list-style-type: none"> AI Explainability 360 Incubating ALIBI ELIS Microsoft InterpretML UNIVERSITY OF WASHINGTON Lime Google Lucid SHAP SKATER TreeInterpreter 	<ul style="list-style-type: none"> Adversarial Robustness Toolbox Graduated AdvBox adver torch cleverhans UNIVERSITY OF TORONTO Footbox 	<ul style="list-style-type: none"> AI Fairness 360 Incubating Aequitas Audit AI Scalad University DeepFP Fairlearn

Distributed Computing

Computing & Management	Interface
<ul style="list-style-type: none"> EDL Elastic Deep Learning SOAJS Apache Bahir MESOS Apache Ranger SPARK STORM GNSS NETFLIX genie GraphScope kubernetes intel Nauta OPENSIFT Singularity 	<ul style="list-style-type: none"> sparklyr Incubating APACHE TOREE LOVY

The LF AI & Data landscape explores open source projects in Artificial Intelligence and Data and their respective domains.

lfaidata.foundation

LF AI & DATA Landscape

LF AI & DATA

Security & Privacy

<ul style="list-style-type: none"> Google Differential Privacy HElib Microsoft SEAL Google TensorFlow Privacy TF Encrypted

Natural Language Processing

Natural Language Processing
<ul style="list-style-type: none"> DELTA Incubating RosaeNLG Sandbox Google ALBERT AllenNLP Google Bert CoreNLP mozilla DeepSpeech fastText flair LUON Kashgari FACEBOOK LASER Intel NLP Architect NLP ParIAI FACEBOOK PyText RASA spaCy Transformers FACEBOOK XLM YouTokenToMe

Notebook Environment

Notebook Environment
<ul style="list-style-type: none"> Elyra Sandbox colab IP[y]: IPython jupyter IBM Polynote Stencila Streamlit