Library/Framework	Year	Developer/Organization	Primary Use Case	GPU Support	Programming Language	Similar To	Special Features
PyTorch/LibTorch	2016	Facebook (Meta)	Deep Learning	Yes	Python, C++	TensorFlow, JAX	Dynamic computation graph, strong GPU/TPU integration, widely used in research and production. Strong C++ API for deployment, ONNX compatibility.
TensorFlow	2015	Google Brain	Deep Learning	Yes	Python	PyTorch, JAX	Static and eager execution, TPU support, and a rich ecosystem (TensorFlow Lite, TensorFlow.js).
TensorFlow C++ API	2015	Google Brain	Deep Learning	Yes	C++		Optimized for production environments, C++ deployment.
MXNet	2015	Apache Software Foundation	Deep Learning	Yes	Python, C++, Scala	TensorFlow, PyTorch	Scalable, supports both imperative and symbolic programming, good for multi-language support.
Chainer	2015	Preferred Networks	Deep Learning	Yes	Python	PyTorch	Define-by-run dynamic computation graphs, flexible and lightweight.
Flux.jl	2018	Julia Community	Deep Learning	Yes	Julia	PyTorch, JAX	Supports differentiable programming and GPU acceleration, native to Julia.
Torch	2002	Ronan Collobert	Deep Learning	Yes	Lua	TensorFlow	Predecessor to PyTorch, uses Lua; now deprecated.
JAX	2018	Google	Numerical Computation, Deep Learning	Yes	Python	NumPy, TensorFlow	Accelerated via XLA (ML compiler), supports automatic differentiation and JIT compilation.
NumPy	2006	Travis Oliphant	Numerical Computation	No	Python	JAX, CuPy	Core library for array operations, essential for scientific computing.
SciPy	2001	SciPy Community	Scientific Computation	No	Python	NumPy	Advanced linear algebra, optimization, and signal processing.
Theano	2007	Université de Montréal	Numerical Computation, ML	Yes	Python	JAX, TensorFlow	First library to introduce GPU support in ML; now largely deprecated.
CuPy	2015	Preferred Networks	GPU-Accelerated NumPy	Yes	Python	NumPy, JAX	GPU-accelerated array computations with NumPy-compatible syntax.
ArrayFire	2003	ArrayFire Community	High-Performance Computing	Yes	C++, Python, Fortran	NumPy, CuPy	Multi-platform support (CPU, GPU, FPGA) for scientific and engineering computations.
Julia Base	2012	Julia Community	Numerical Computation	Yes	Julia	NumPy	High-performance language designed for numerical and scientific computing.
MATLAB	1984	MathWorks	Scientific Computing, ML	Limited	MATLAB	NumPy, SciPy	Matrix-centric language, industry standard for engineering and academia.
OpenCV	2000	Intel, OpenCV Community	Computer Vision	Yes	C++, Python	SciPy (for images)	Specialized in image processing, supports real-time applications.
Dask	2015	Matthew Rocklin	Distributed/Parallel Computation	Limited	Python	NumPy, Pandas	Scales computations across distributed clusters, supports arrays and dataframes.
Pandas	2008	Wes McKinney	Data Analysis	No	Python	Dask (for dataframes)	Optimized for dataframes, data manipulation, and analysis.
Vaex	2018	Vaex.io	Big Data Analysis	No	Python	Pandas, Dask	Memory-mapped operations, handles large datasets efficiently, supports lazy computation.