

Overview of the LF Deep Learning Foundation

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This presentation is available at:

<https://github.com/LFDLFoundation/presentations>

 THE **LINUX** FOUNDATION

 **LF** DEEP LEARNING

What is LF DL Foundation?

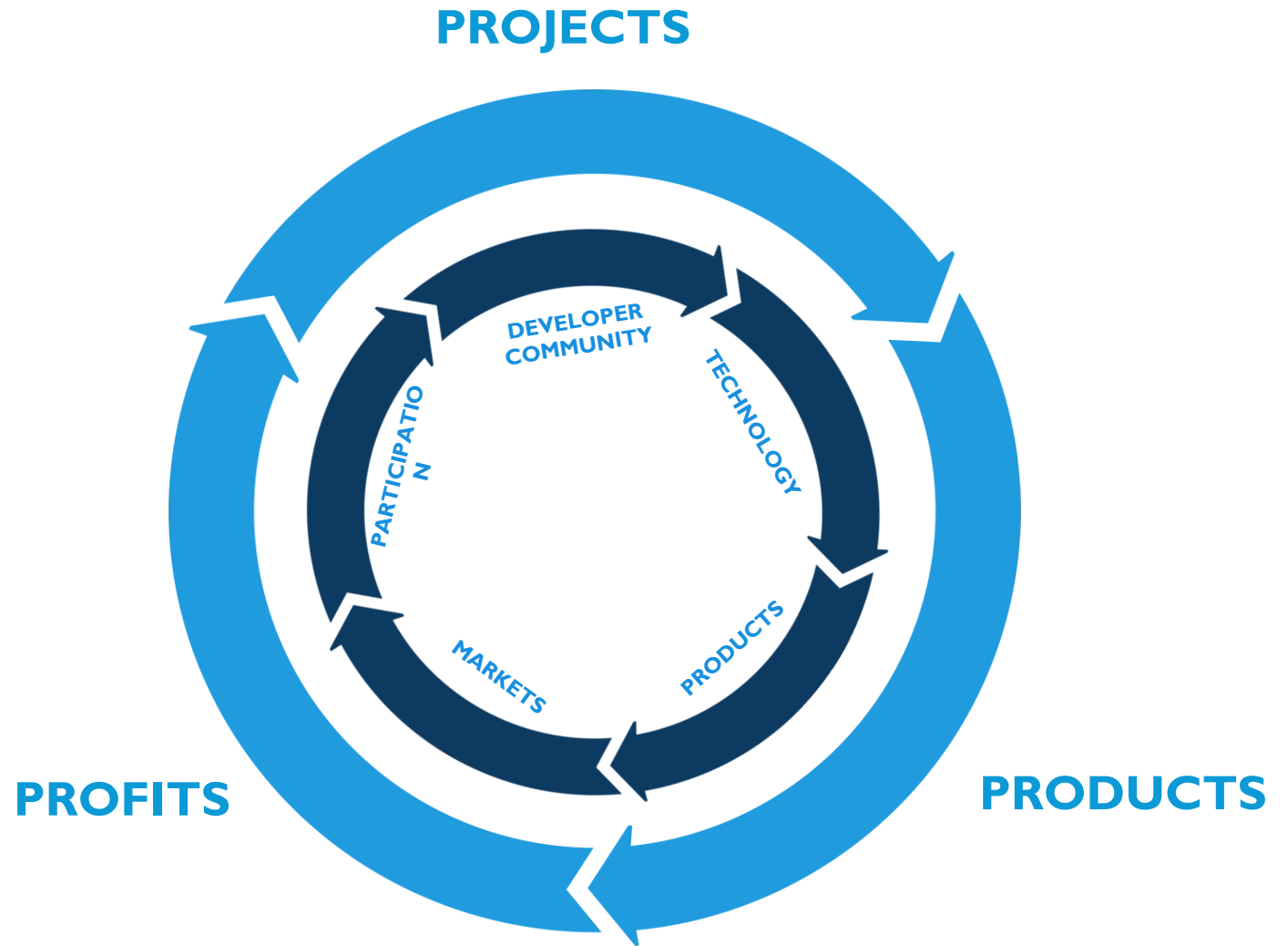
- LF DL is a Linux Foundation project founded in March 2018 to support collaboration and open source innovation in the AI, ML, and DL domains.
- LF DL members are collaborating to create a neutral space for harmonization and acceleration of separate technical projects focused on AI, ML, and DL technologies.

Current Members



LF DL: Creating a Sustainable Open Source AI Ecosystem

Successful open source projects depend on members, developers, standards and infrastructure to develop products that the market will adopt.



Mission

Build and support an open community of data scientists, researchers, and developers focused on AI, ML, and DL, and drive open source innovation in these domains by enabling collaboration and the creation of new opportunities for the community and their supporting organizations.

Strategic Goals

- › Offer a neutral environment that fosters collaboration and cross-pollination between open source projects focused on AI/ML/DL
- › Increase efforts to harmonize AI/ML/DL open source projects and reduce fragmentation
- › Become the home of open source efforts for AI ethics and fairness
- › Host open source data lakes and offer a marketplace for AI/ML/DL models
- › Increase awareness of key AI/ML/DL open source projects and increase the ease of use of these projects

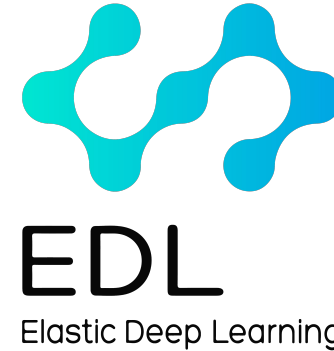
Current Projects



Marketplace for
machine learning
models.



A high-performance
distributed
machine-learning
platform based on
Parameter Server,
running on YARN
and Apache Spark.

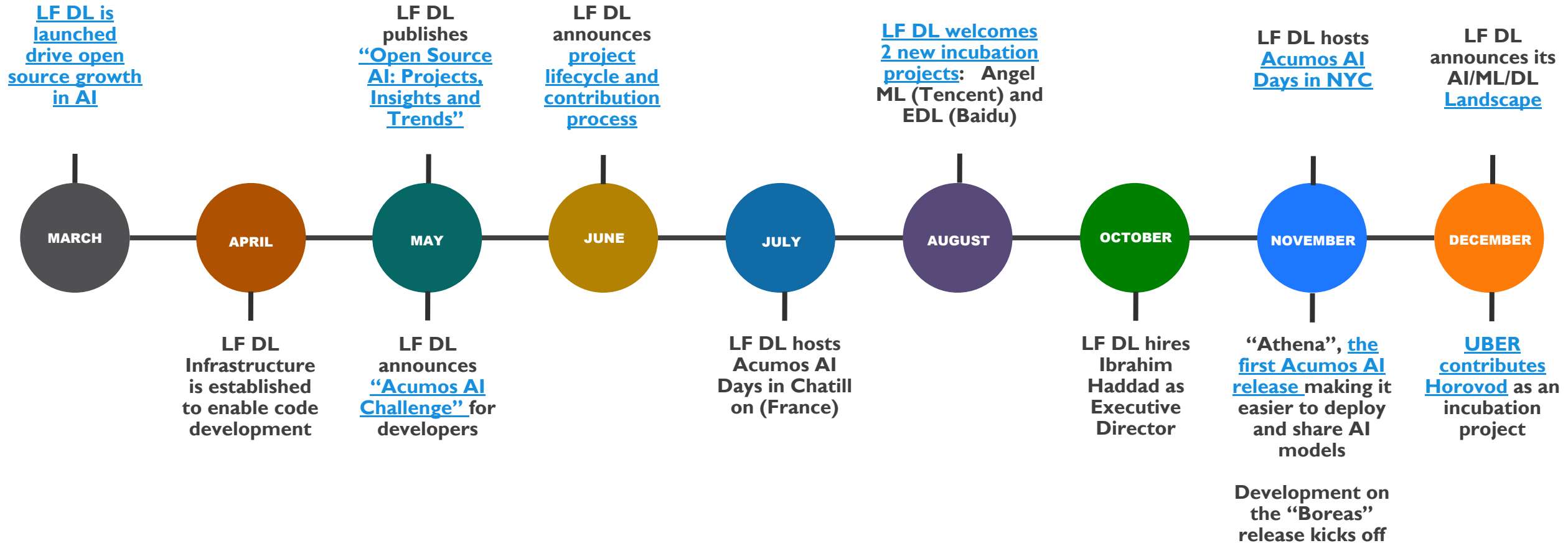


A framework
designed to help
deep learning cloud
service providers to
build cluster cloud
services using
different deep
learning frameworks.



Distributed training
framework for
TensorFlow, Keras,
and PyTorch.

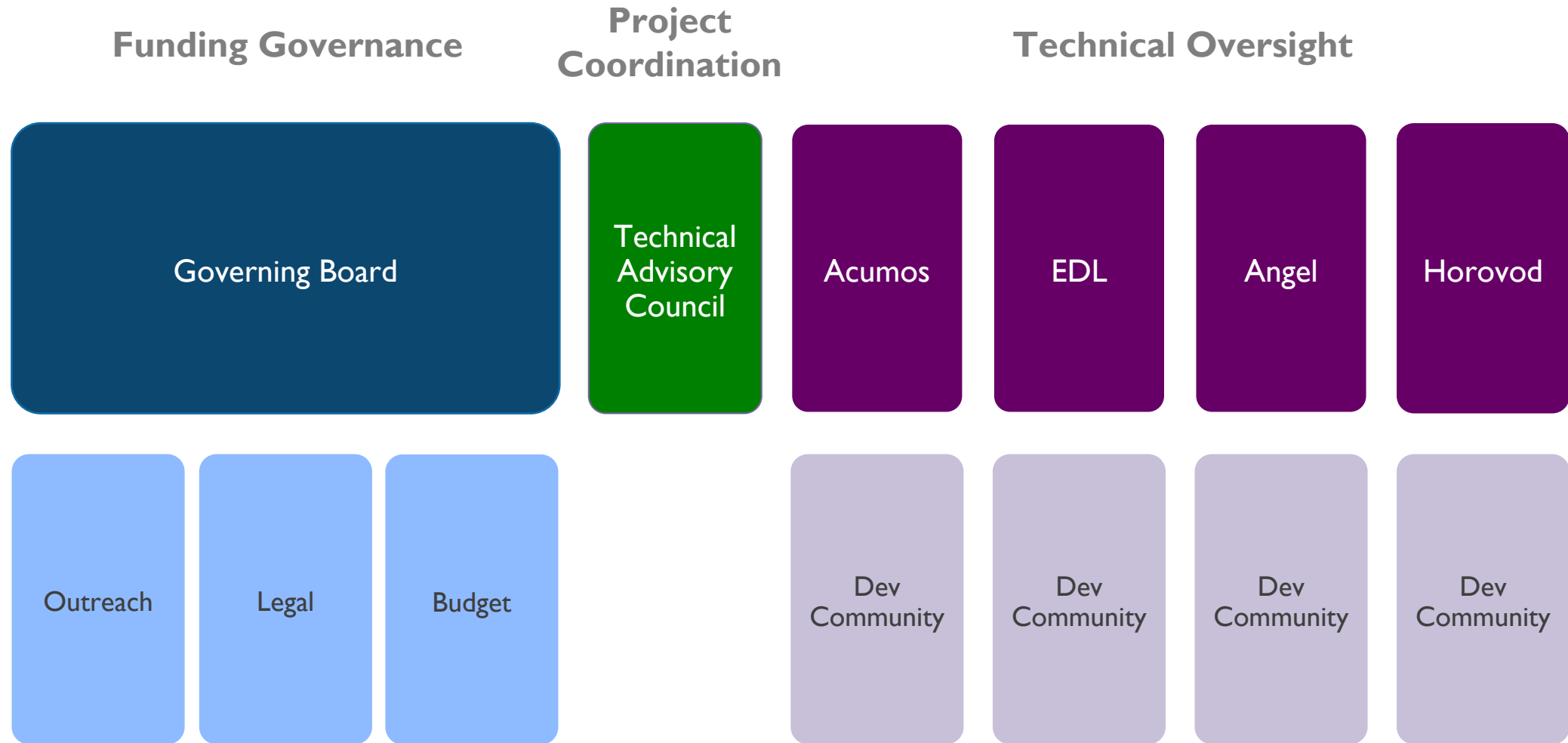
2018 Major Milestones



Governance and Structure 1/2

- › LF DL is a single funding effort to support technical projects hosted under in the Foundation.
- › Technical projects have their own technical governance following our principle of separation of technical governance from funding governance.
- › The Foundation's Charter is available from <https://lfdl.io>.

Governance and Structure 2/2



Hosting Projects under LF DL: Project Contribution Process

<https://github.com/LFDLFoundation/proposing-projects>

On-boarding Projects into LF DL

- › Projects are on-boarded and progress pursuant to the LF Deep Learning Foundation's Lifecycle and Project Contribution Process Documents.
 - › Three stages: Incubation, Graduation and Archive.
 - › These documents can be found on [GitHub](#).

LF DL Project Maturities

› Incubation projects

Projects join LF DL as incubation by meeting the requirements set forth in the “Project Lifecycle Document”.

TAC Vote.

› Graduate projects

Incubation requirements.

Additional requirements as set in the “Project Lifecycle Document”.

TAC Vote + GB Vote.

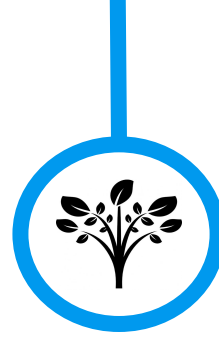
Criteria to Accept Incubation Project Under LF DL

1. Submit a completed Project Contribution Proposal to the TAC
 - › Process and proposal are available on [Github](#) and on the LF DL web site
2. Present the project and the proposal to the TAC and, if requested, to the Governing Board
3. Be deemed by the TAC and Governing Board to fall within the mission and scope of LF DL Foundation and to add value to the AI/ML/DL space
4. Have an OSI-approved open source license
5. Agree to transfer any relevant trademarks to The Linux Foundation or its affiliate, LF Projects, LLC, and to assist in filing for any relevant unregistered ones

Criteria to Accept Graduation Project Under LF DL

In addition to the Incubation stage requirements, a project must meet these requirements:

1. Have a healthy number of committers from at least two organizations*
2. Have achieved and maintained a [Core Infrastructure Initiative Best Practices Badge](#)
3. Demonstrate a substantial ongoing flow of commits and merged contributions
4. Document current project owners and current and emeritus committers in OWNERS.md and COMMITTERS.md files
5. A copy of the project's charter (or other governance document) shall be included or linked to in a GOVERNANCE.md or in a similar file
6. Have a technical lead appointed for representation of the project to the TAC
7. Receive the affirmative vote of 2/3 of the TAC and the affirmative vote of the Governing Board



LF Deep Learning has a modular approach to hosting projects.

Think of LF Deep Learning as a greenhouse growing and sustaining open source AI/ML/DL projects from seed to fruition. The Linux Foundation and LF Deep Learning provide the infrastructure and support for open development to occur among a diverse and thriving community, in addition to a number of enabling services (legal, PR/marketing, events, compliance scans, etc.).

Benefits of Hosting Projects at the LF DL Foundation

1. Maintain your committers and define your own project governance (as long as its neutral)
2. A not-for-profit, neutral home increases contributions from external organizations
3. LF DL staff eager to assist (Executive Director, Project Manager, IT staff, PR, marketing, events, etc.)
4. LF DL blog announcement or similar announcing the inclusion of the project
5. Infrastructure resources (wiki, build, jira, mailing lists, support staff, etc.)
6. Neutral hosting of the project's trademark
7. An initial license scan of the project's codebase
8. Cross pollination opportunities with other LF DL projects
9. Endorsement by LF DL Technical Advisory Committee (TAC) - Appointment of an existing TAC member as a sponsor of the project and provide recommendations regarding governance best practices
10. Right to refer to the project as a "LF Deep Learning Foundation Project," with the right, subject to applicable trademark usage guidelines, to display the Deep Learning logo on the project's code repository
11. Graduation stage may receive support as determined by the Governing Board

Contact Us!

- › LF DL is actively reaching out to open source AI/ML/DL projects for contribution and collaboration. If you have a project that could benefit from:
 - › Community building
 - › Marketing and brand outreach strategies
 - › Developer support
 - › Collaboration with other projects
- › Please reach out to us!
 - › info@lfdl.io
 - › [@IbrahimAtLinux](https://twitter.com/IbrahimAtLinux)

Joining the LF Deep Learning Foundation

Membership Benefits

Organizations join LF DL because they want to take an active role in supporting the growth and evolution of the open source **AI/ML/DL** ecosystem.

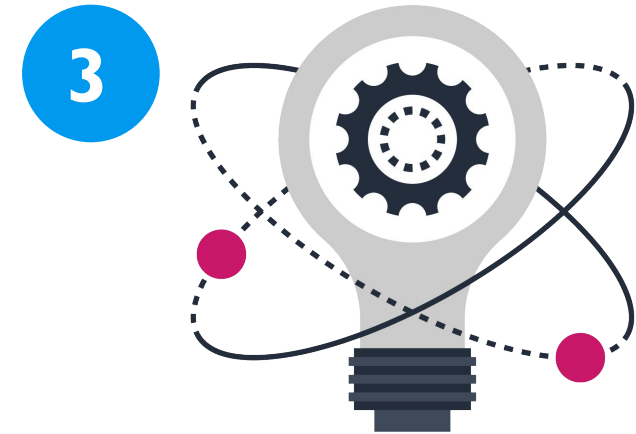
LF DL Membership Provides:



Marketing Amplification
and Brand Awareness



Community Engagement



Thought Leadership

LF Deep Learning Foundation Annual Dues

	Not Yet a Linux Foundation Member	Existing Linux Foundation Member
Premier Member	\$120,000	\$100,000
General Member	5,000 employees +: \$45,000 2,000 - 4,999: \$30,000 500 - 1,999: \$25,000 Up to 499 employees: \$10,000	5,000 employees +: \$25,000 2,000 - 4,999: \$15,000 500 - 1,999: \$10,000 Up to 499 employees: \$5,000

General Membership

Targeted for organizations that want to put their organization in full view in support of LF DL and our mission. Organizations that join at the General level are deeply committed to using open source technology, helping LF DL grow, voicing the opinions of their customers, and giving back to the community.

General members are eligible to:

- Participate in elections to appoint one (1) representative to the LF DL Governing Board per every ten (10) General members, up to three (3) maximum General representatives.
- Receive greater insight into LF DL strategy and project roadmaps through increased engagement with the LF DL Executive Director and staff.
- Create an individualized press release upon membership announcement with the LF DL PR team.
- Participate in all Marketing, Community, Thought Leadership opportunities.
- Demonstrate your support for LF DL by displaying your logo on the LF DL website and in marketing materials.

Premier Membership

Highest tier of membership – For organizations who contribute heavily to open source AI, ML and DL and bring in their own projects to be hosted at the Foundation. They work in concert with LF DL + LF team members. These companies want to take the most active role in enabling open source AI, ML and DL.

Premier members are eligible to:

(Enjoy all the benefits of General level, plus;)

- Appoint one (1) representative to the LF DL Governing Board.
- Appoint one (1) representative as a voting member in any subcommittees or activities of the Governing Board.
- Enjoy most prominent placement in displays of membership including on the website and in marketing materials.
- Increased access to Linux Foundation's invitation-only Open Source Leadership Summit.
- Create an individualized press release upon membership announcement with the LF DL PR team.
- Receive ongoing, individual engagement and guidance from LF DL Executive Director and staff.

Interactive AI/ML/DL Landscape

LF Deep Learning Foundation – Interactive Landscape

This landscape is intended as a map to explore open source artificial intelligence, machine learning, and deep learning projects; it also features the member companies of the LF Deep Learning Foundation.

<https://l.lfdl.io>

Please [open](#) a pull request to correct any issues.

Try it: lfdl.io

LF DEEP LEARNING Landscape

Reset Filters

Grouping
No Grouping

Sort By
Alphabetical (a to z)

Category
Any

LFDL Relation
Any

License
Any

Organization
Any

Headquarters Location
Any

Example filters:
Open source by age
Landscape categories
Open source by stars
Group by location
Sort by MCap/Funding

Download as CSV

LF Deep Learning Foundation Interactive Landscape

The LF Deep Learning Foundation landscape (png, pdf) is dynamically generated below. It is modelled after the Cloud Native Computing Foundation (CNCF) landscape and based on the same open source code. Please open a pull request to correct any issues. Greyed logos are not open source. Last Updated: 2018-12-13 17:56:10Z


You are viewing 99 cards with a total of 610,202 stars, market cap of \$3.31T and funding of \$45.7B.

Card Mode Landscape

No Grouping (99)




Accord.NET
Accord.NET Framework
★ 3,184




Acumos
LF Deep Learning Foundation
★ 4




AI Fairness 360 Toolkit (AIF360)
Adversarial Robustness Toolkit
★ 499
MCap: \$110B



Adversarial Robustness Toolkit (ART)
AI Fairness 360 Toolkit
★ 359
MCap: \$110B



AllenNLP
Allen Institute for Artificial Intelligence
★ 4,547



Amdocs
Amdocs
MCap: \$8.5B




Analytics Zoo
Intel
★ 293
MCap: \$218B



Angel
Angel-ML
LF Deep Learning Foundation
★ 3,855




Apache Airflow
Apache Software Foundation
★ 10,236



Apache Ambari
Apache Software Foundation
★ 977



Apache Bahir
Apache Software Foundation
★ 187



Apache Drill
Apache Software Foundation
★ 1,070




Apache Mesos
Apache Software Foundation
★ 3,974



Apache Nifi
Apache Software Foundation
★ 1,204



Apache Ranger
Apache Software Foundation
★ 202



Apache SINGA
Apache Software Foundation
★ 1,536



Apache Storm
Apache Software Foundation
★ 5,454




Apache SystemML
Apache Software Foundation
★ 731



Apache Toree
Apache Software Foundation
★ 555




Apache Zeppelin
Apache Software Foundation
★ 3,881




Apex
Apache Software Foundation
★ 303



Argo
Intuit
★ 2,116
MCap: \$54.3B



AT&T
AT&T
MCap: \$320B




B-YOND
Byond
Funding: \$2.6M



Baidu
Baidu
MCap: \$62.7B




BeakerX
Two Sigma
★ 1,960



Beam
Apache Software Foundation
★ 2,381



BigDL
Intel
★ 2,729
MCap: \$218B




Caffe
University of California, Berkeley
★ 26,496
Funding: \$66.5M




Caffe2
Facebook
★ 8,396
MCap: \$415B



Chainer
Preferred Networks
★ 4,376
Funding: \$130M



Ciena
Ciena
MCap: \$4.58B




CNTK
Microsoft
★ 15,552
MCap: \$837B




Community Data License Agreement (CDLA)
The Linux Foundation
0



DiDi
DiDi Chuxing
Funding: \$20.6B



Druid
Apache Software Foundation
★ 7,332



dy/net
Dynamic Neural Network Toolkit
★ 2,595
Funding: \$28M




DL4J
Eclipse DeepLearning4j
★ 9,935




EDL
Elastic Deep Learning (EDL)
LF Deep Learning Foundation
★ 25



Microsoft Embedded Learning Library
Microsoft
★ 1,860
MCap: \$837B




Ericsson
Ericsson
MCap: \$30.5B



fastText
Facebook
★ 16,683
MCap: \$415B



FfDL
IBM
★ 413
MCap: \$110B



Flink
Apache Software Foundation
★ 5,256




H2O
H2O.ai
★ 3,648
Funding: \$73.6M



Horizon
Facebook
★ 1,490
MCap: \$415B




Horovod
LF Deep Learning Foundation
★ 4,604




HUAWEI
Huawei Technologies




Intel
Intel
MCap: \$218B




Julia
NumFOCUS
★ 19,111




Jupyter
Jupyter Notebooks
NumFOCUS
★ 5,058



Kafka
Apache Software Foundation
★ 10,453



Kaggle
Google
★ 1,891
MCap: \$743B




Keras
Keras
★ 36,347




Kubeflow
Google
★ 5,287
MCap: \$743B




Kubernetes
Cloud Native Computing Foundation (CNCF)
★ 45,263




Livy
Apache Software Foundation
★ 217




Mahout
Apache Software Foundation
★ 1,569




ML.NET
Microsoft
★ 4,338
MCap: \$837B



mlflow
DataBricks
★ 2,768
Funding: \$250M




Spark MLlib
MLlib
Apache Software Foundation
★ 19,840




Model Asset eXchange (MAX)
IBM
★ 1
MCap: \$110B



MXNet
Apache Software Foundation
★ 15,773



Nokia
Nokia
MCap: \$34.1B




NumPy
NumPy
★ 8,990



Nyoka
Software AG
★ 30
MCap: \$2.75B



ONNX
Microsoft
★ 5,092
MCap: \$837B




OpenAI Gym
OpenAI
★ 14,711
Funding: \$120K




OpenNN
Artelincs
★ 579
Funding: \$56K



Orange
Orange
MCap: \$44.7B

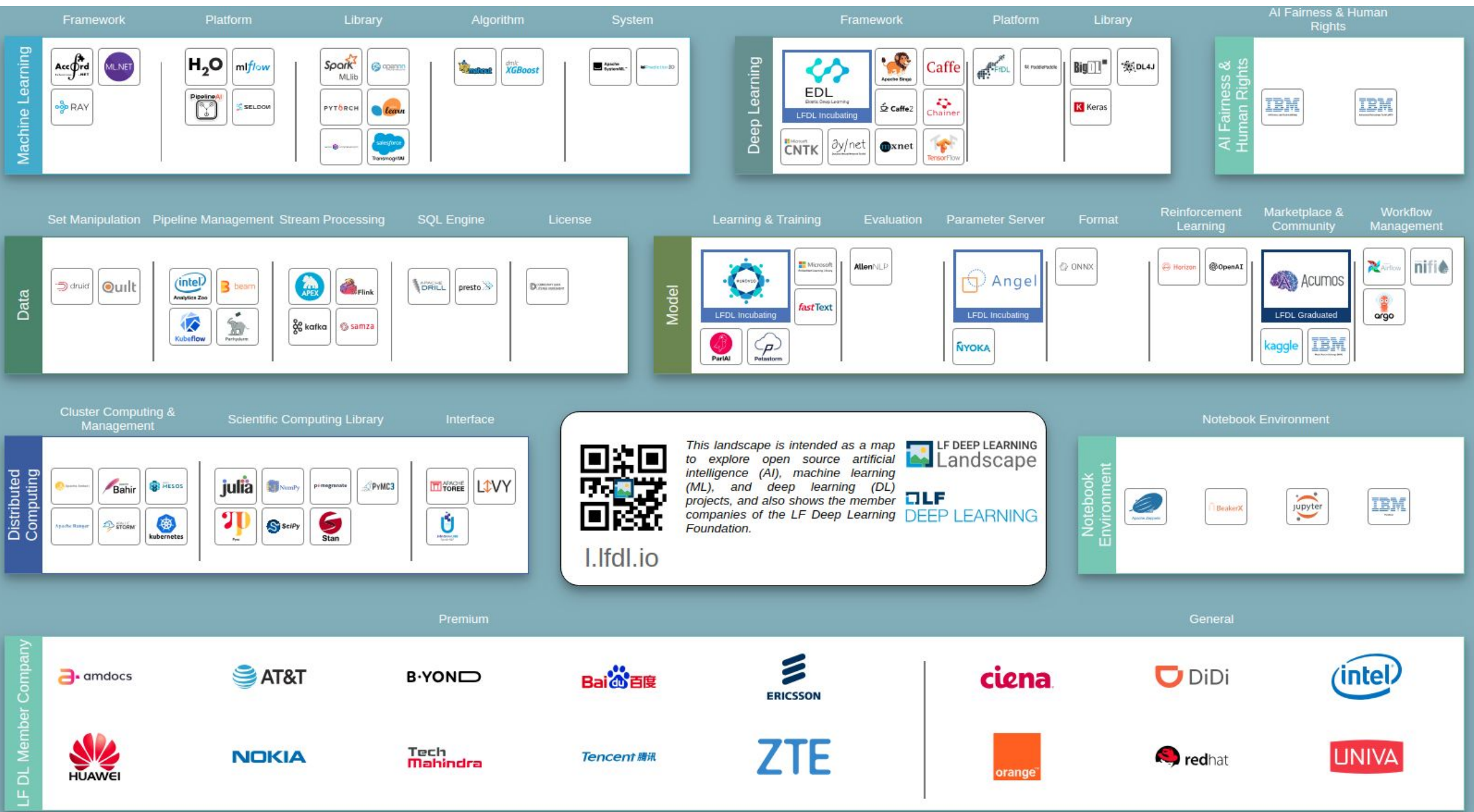


Pachyderm
Pachyderm
★ 3,292
Funding: \$12.1M



PaddlePaddle
Baidu
★ 7,888
MCap: \$62.7B

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Joining LF DL Foundation is easy.
Join today!

Please follow up with Ibrahim Haddad
Ibrahim@LinuxFoundation.org
or
info@lfdl.io