

Overview of the LF Deep Learning Foundation

Ibrahim Haddad, Ph.D. – Executive Director
[@IbrahimAtLinux](https://github.com/IbrahimAtLinux)

This presentation is available at:
<https://github.com/LFDLFoundation/presentations>

 THE **LINUX** FOUNDATION

 **LF** DEEP LEARNING

What is LF DL Foundation?

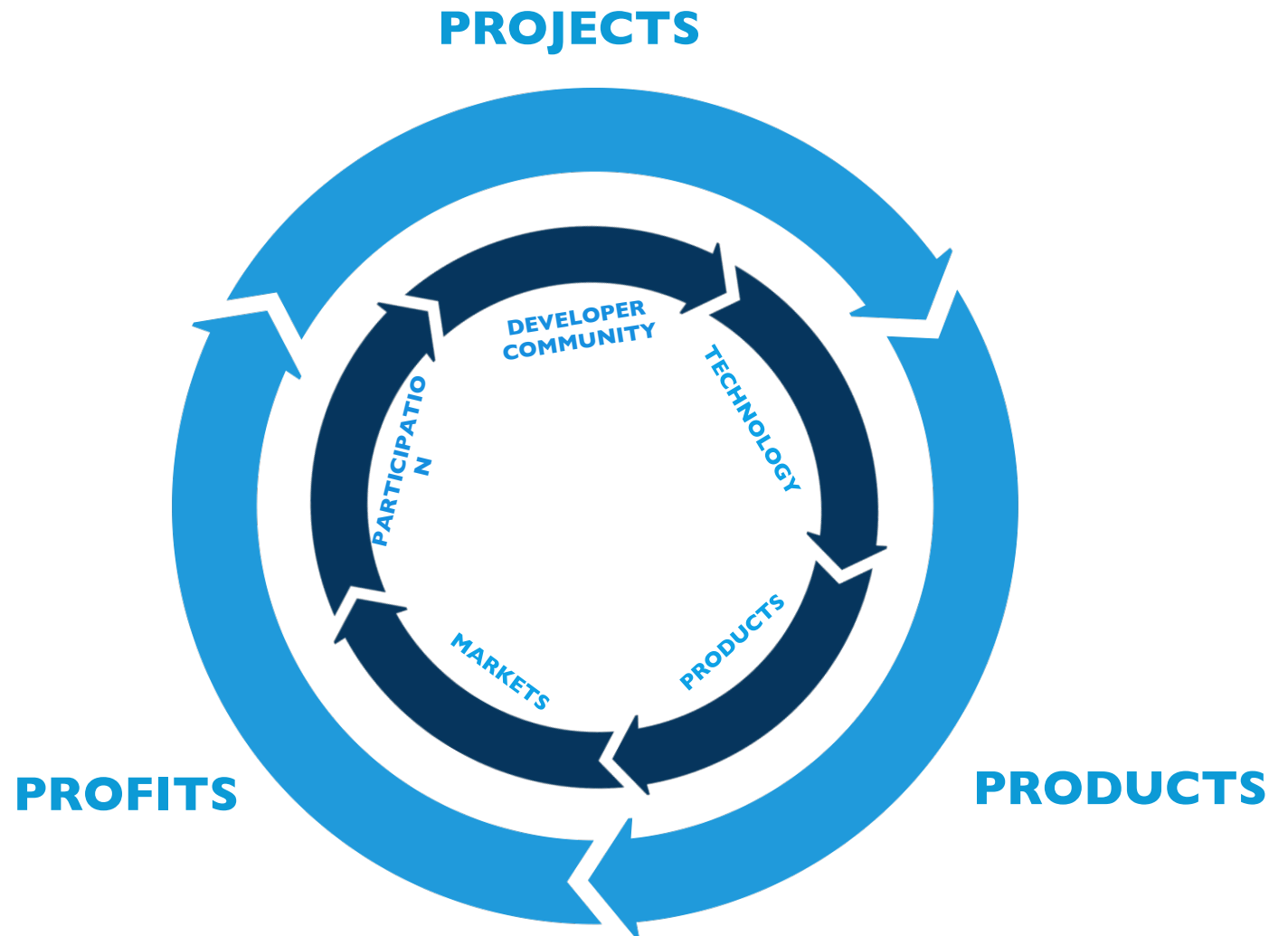
- LF DL is a Linux Foundation project founded in March 2018 to support collaboration and open source innovation in the AI, ML, and DL domains.
- LF DL members are collaborating to create a neutral space for harmonization and acceleration of separate technical projects focused on AI, ML, and DL technologies.

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

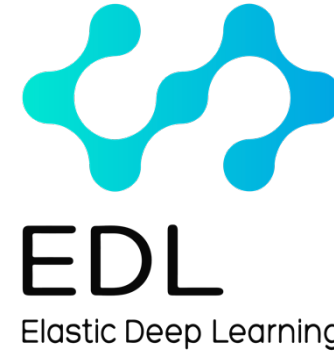
Current Projects



AI model workflow
and discovery
platform.



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

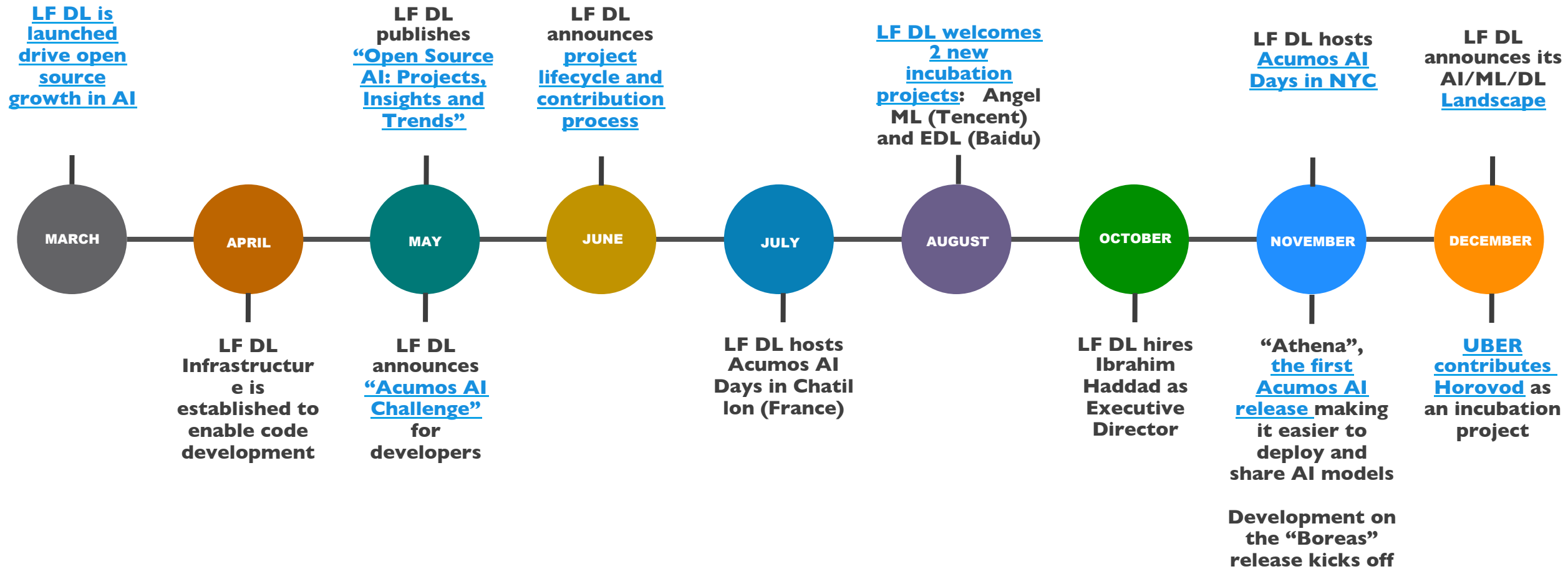


A framework
designed to help
deep learning cloud
service providers to
build cluster cloud
services using
different deep
learning frameworks.



Distributed training
framework for
TensorFlow, Keras,
and PyTorch.

2018 Major Milestones



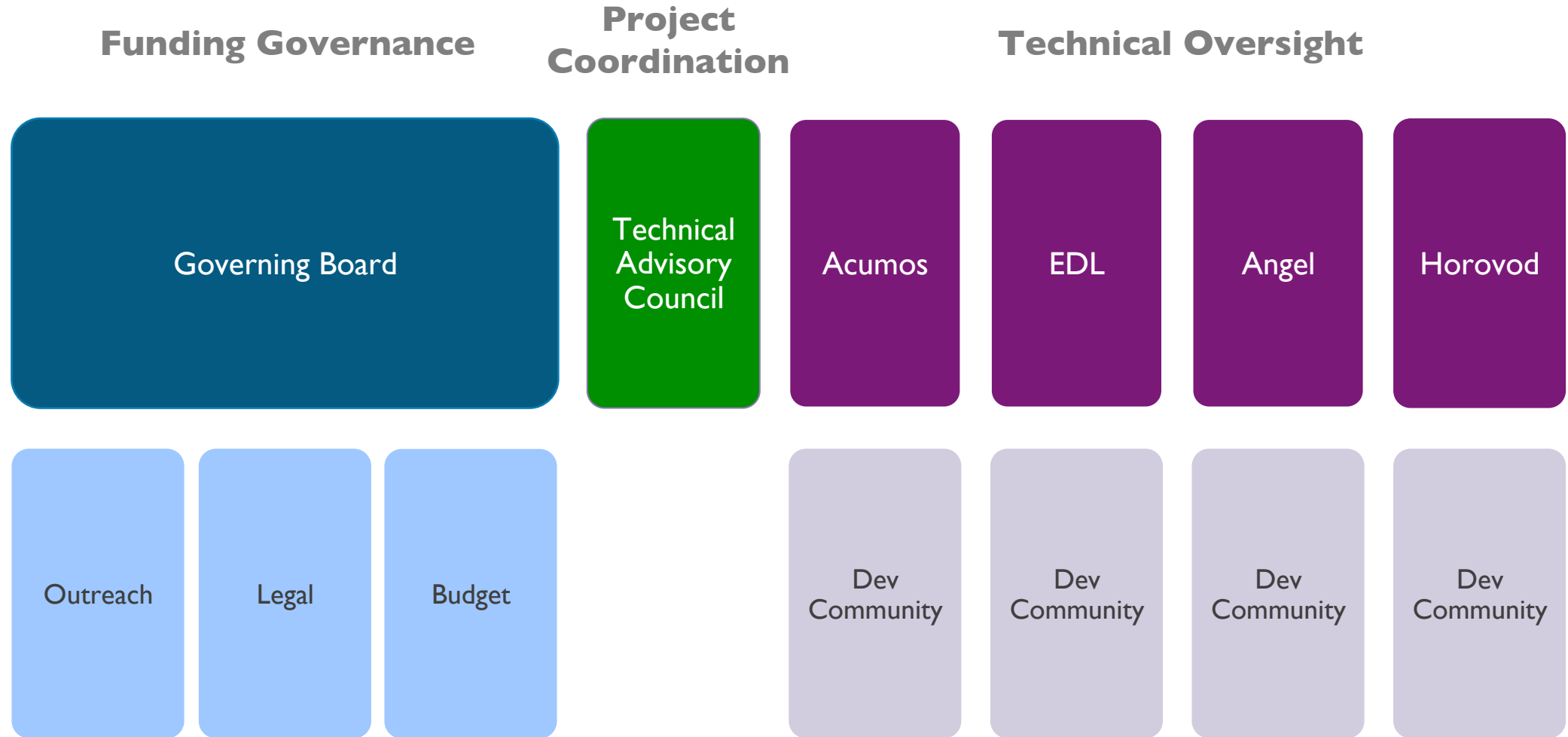
Governance and Structure

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

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Hosting Projects the 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 (ED, PM, 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 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

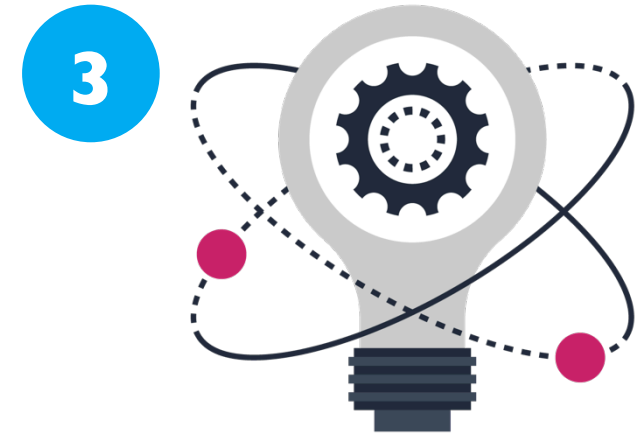
LF DL Membership Provides:



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.fdl.io>

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

Try it: l.fdl.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 MCapiFunding

Download as CSV

KubeCon
December 11-13
Seattle, WA

KubeCon
May 20-23
Barcelona, Spain

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

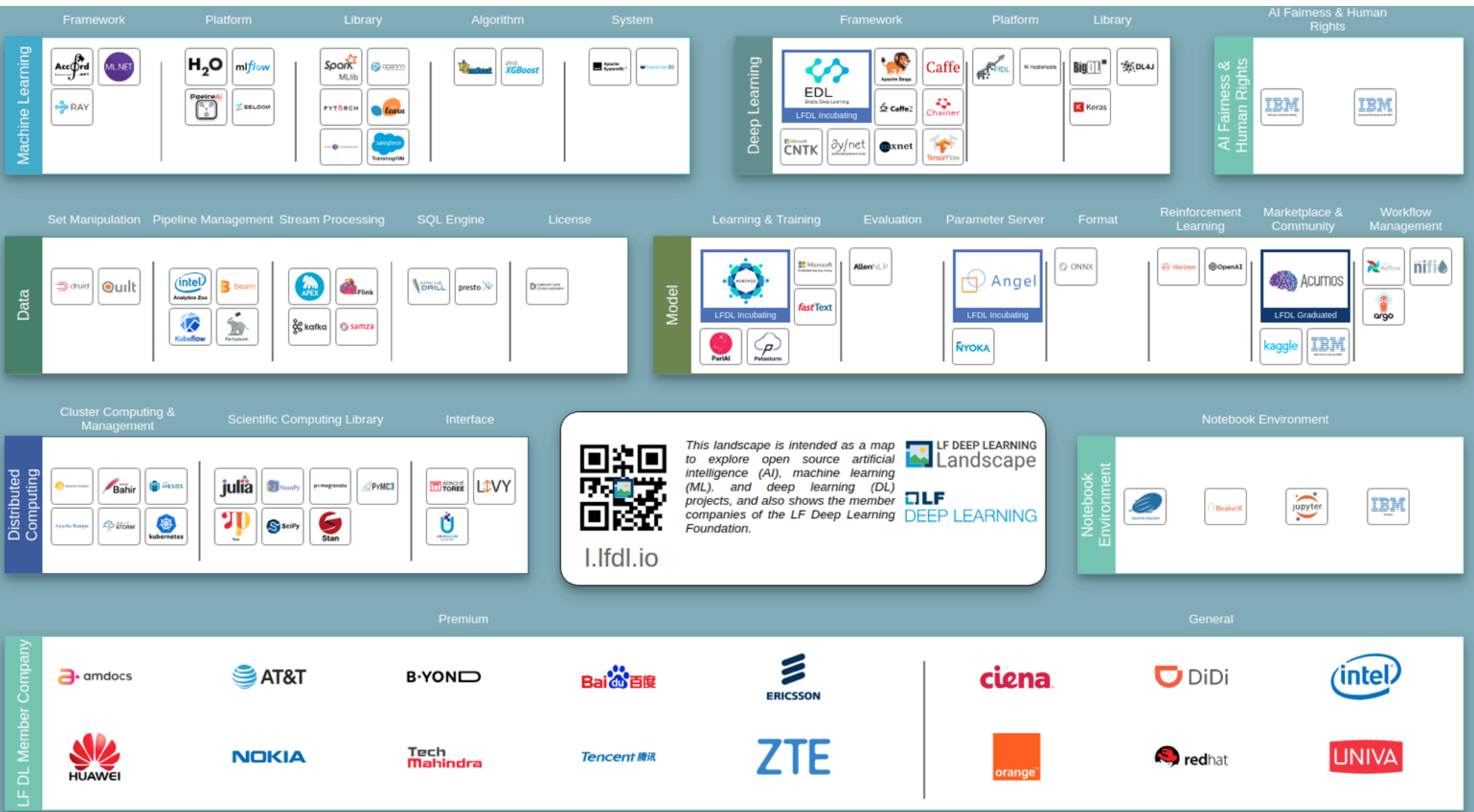
You are viewing 99 cards with a total of 610,202 stars, market cap of \$3.31T and funding of \$45.7B.

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 IBM ★ 499 MCap: \$110B	 Adversarial Robustness Toolkit (ART) AI Fairness 360 Toolkit IBM ★ 359 MCap: \$110B	 AllenNLP Allen Institute for Artificial Intelligence ★ 4,547	 amdocs MCap: \$5.5B	 Analytics Zoo Intel ★ 203 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 ★ 105	 Apache Zeppelin Apache Software Foundation ★ 3,881	 Apex Apache Software Foundation ★ 303	 Argo Intuit ★ 2,116 MCap: \$54.3B	 AT&T AT&T MCap: \$220B	 B.YOND Byond Funding: \$2.6M
 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: \$68.5M	 Caffe2 Facebook ★ 8,396 MCap: \$415B	 Chainer Preferred Networks ★ 4,376 Funding: \$130M	 Ciena MCap: \$4.58B	 CNTK Microsoft ★ 15,952 MCap: \$637B	 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 Carnegie Mellon University ★ 2,595 Funding: \$28M	 DL4J Eclipse DeepLearning4j Eclipse Foundation ★ 9,335	 EDL Elastic Deep Learning LF Deep Learning Foundation ★ 25	 Microsoft Embedded Learning Library Microsoft ★ 1,860 MCap: \$637B	 Ericsson MCap: \$30.5B	 fastText Facebook ★ 16,683 MCap: \$415B	 FfDL IBM ★ 413 MCap: \$110B	 Flink Apache Software Foundation ★ 5,256	 H2O.ai H2O.ai ★ 3,648 Funding: \$73.6M	 Horizon Facebook ★ 1,499 MCap: \$415B	 Horovod LF Deep Learning Foundation ★ 4,604	 Huawei Huawei Technologies
 Intel MCap: \$218B	 Julia NumFOCUS ★ 18,111	 Jupyter Jupyter Notebooks NumFOCUS ★ 5,098	 Kafka Apache Software Foundation ★ 10,453	 Kaggle Google ★ 1,881 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: \$637B	 mlflow Databricks ★ 2,788 Funding: \$250M
 Spark MLlib Apache Software Foundation ★ 19,840	 IBM Model Asset eXchange (MAX) IBM ★ 1 MCap: \$110B	 MXNet Apache Software Foundation ★ 15,773	 Nokia MCap: \$34.1B	 NumPy NumPy ★ 8,980	 Nyoka Software AG ★ 30 MCap: \$2.75B	 ONNX Microsoft ★ 5,092 MCap: \$637B	 OpenAI Gym OpenAI ★ 14,711 Funding: \$100K	 OpenNN Artelics ★ 579 Funding: \$66K	 Orange MCap: \$44.7B	 Pachyderm Pachyderm ★ 3,292 Funding: \$12.1M	 PaddlePaddle Baidu ★ 7,888 MCap: \$62.3M

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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