



Overview of the LF Deep Learning Foundation

lfdl.io

What is the LF DL Foundation?

- LF DL is a Linux Foundation umbrella 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 environment with an open governance for harmonization and acceleration of separate technical projects focused on AI, ML, and DL technologies.



We are creating a sustainable open source AI ecosystem that makes it easier to create AI products and services using open source technologies.

Mission

Build and support an open AI community, and drive open source innovation in the AI, ML and DL domains by enabling collaboration and the creation of new opportunities for all the members of the community

Current Members

PREMIER MEMBERS



NOKIA

Tech
Mahindra

Tencent
腾讯

ZTE

GENERAL MEMBERS



ciena

DiDi

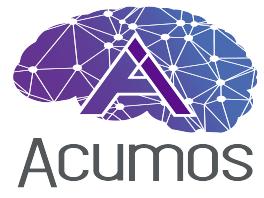
intel AI



redhat.

UNIVA

Current Foundation Projects



Machine learning
platform and
marketplace for ML
models.

Contributed by AT&T
and Tech Mahindra



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

Contributed by Tencent



EDL
Elastic Deep Learning

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

Contributed by Baidu



Distributed training
framework for TensorFlow,
Keras, and PyTorch.

Contributed by Uber

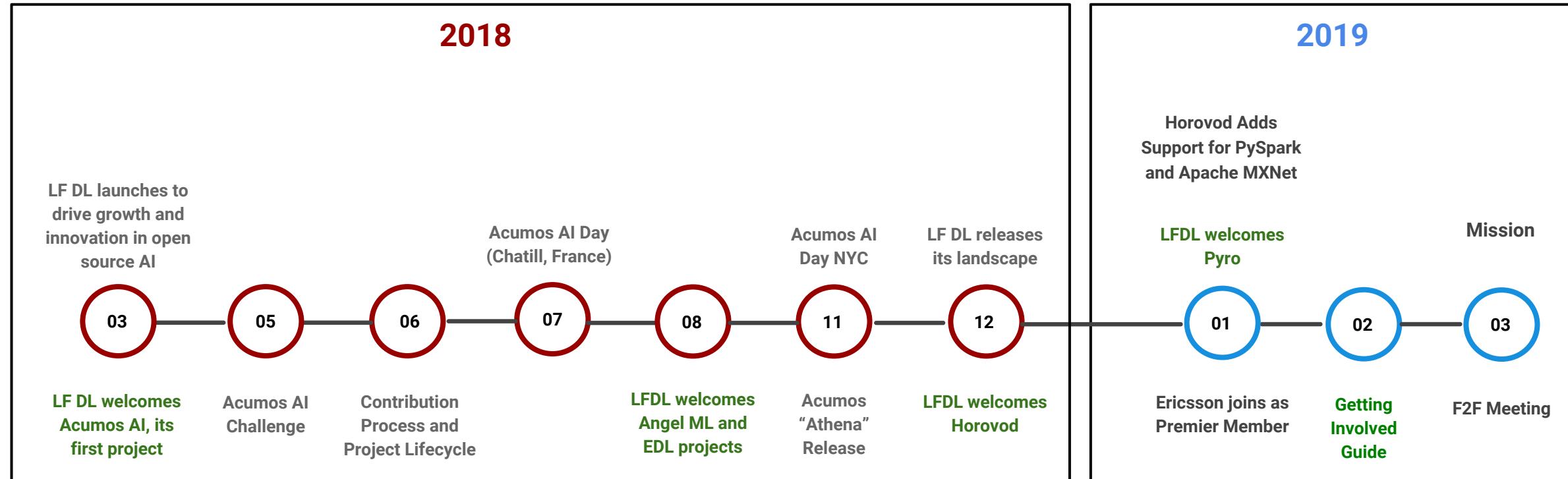


Pyro is a universal
probabilistic programming
language written in Python
and supported by PyTorch
on the backend. It enables
flexible and expressive
deep probabilistic modeling,
unifying the best of modern
deep learning and Bayesian
modeling

Contributed by Uber

Year in Review

Major Milestones



info@lfdl.io



<https://github.com/LFDLFoundation>



<https://lfdl.io>

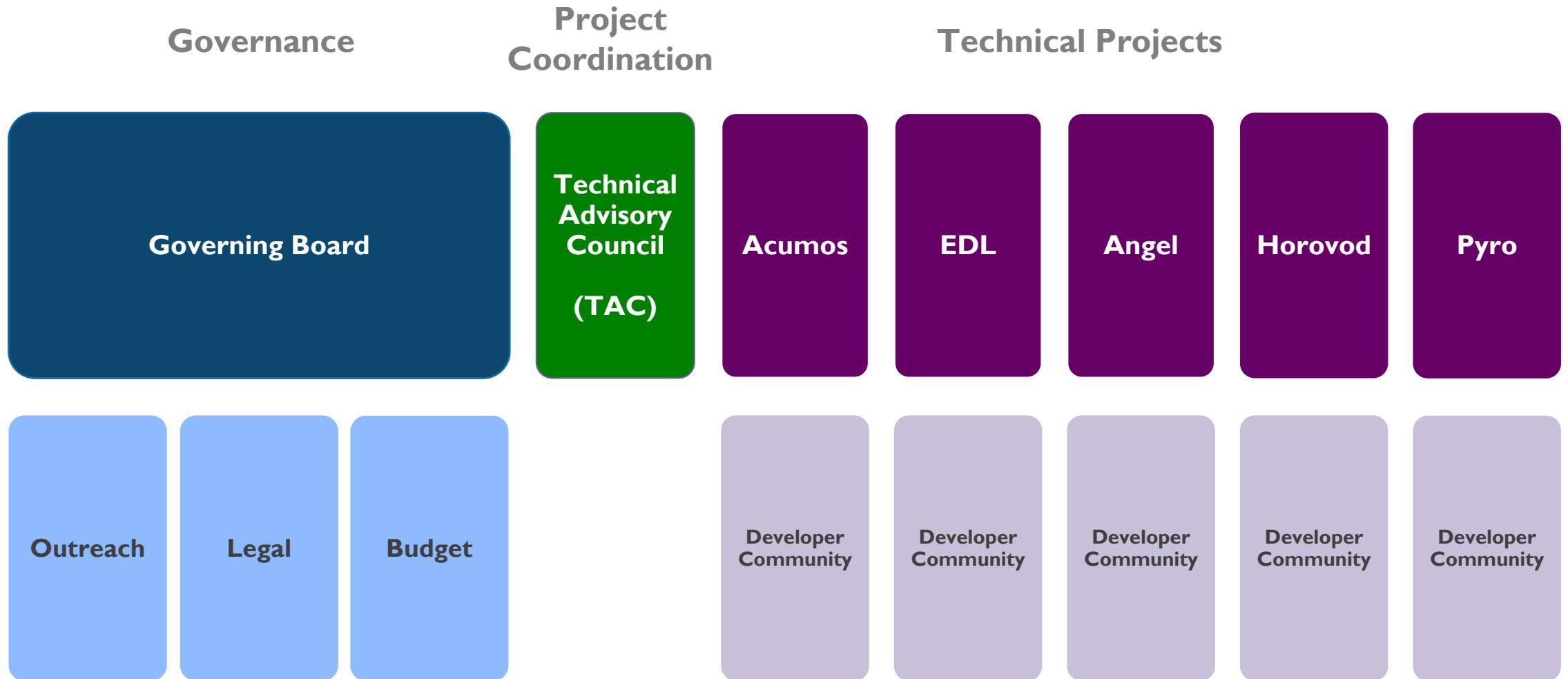


<https://lfdl.io>

Governance

- › 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>.

Structure



A wide-angle photograph of a dark night sky, densely populated with stars of various brightness. A prominent, glowing band of the Milky Way stretches across the center of the frame. Below the horizon, the silhouette of a dense forest of tall evergreen trees is visible against a faint orange glow from the horizon, likely from city lights or a sunset. In the foreground, a dark, textured field of tall grass and small yellow flowers occupies the bottom third of the image.

LF DL Detailed Governance

Governing Board

- › Composition:
 - › Appointees of Premier Members
 - › Representative of General Members (elected annually)
 - › TAC Chair (elected annually)
- › Responsibilities include:
 - › Strategic direction and evolution of the LF DL Foundation
 - › Funding the Foundation
 - › Approving Graduate projects
- › Meets monthly over a conference call

Technical Advisory Council (TAC)

- › Membership on the TAC is made up of Premier Member appointees and a representative of “Graduate” projects.
- › The TAC serves a coordination role:
 - › Facilities communication across and among the supported technical projects; and
 - › Communicates needs and requirements of the projects to the Governing Board
 - › Onboards new projects, assists in progression of existing projects, and reviews projects annually
 - › Defines and maintains the technical vision for the LF DL Foundation
 - › Vote on approving new projects joining the LF DL as incubation or graduate projects
 - › Creates a conceptual architecture for the projects, aligning projects, removing or archiving projects
 - › Defines common practices to be implemented across LF DL projects
- › Meetings via conference calls take place every 2 weeks, are recorded and open to the general public.
 - › <https://lists.deeplearningfoundation.org/g/tac-general/wiki/Home>

Outreach Committee

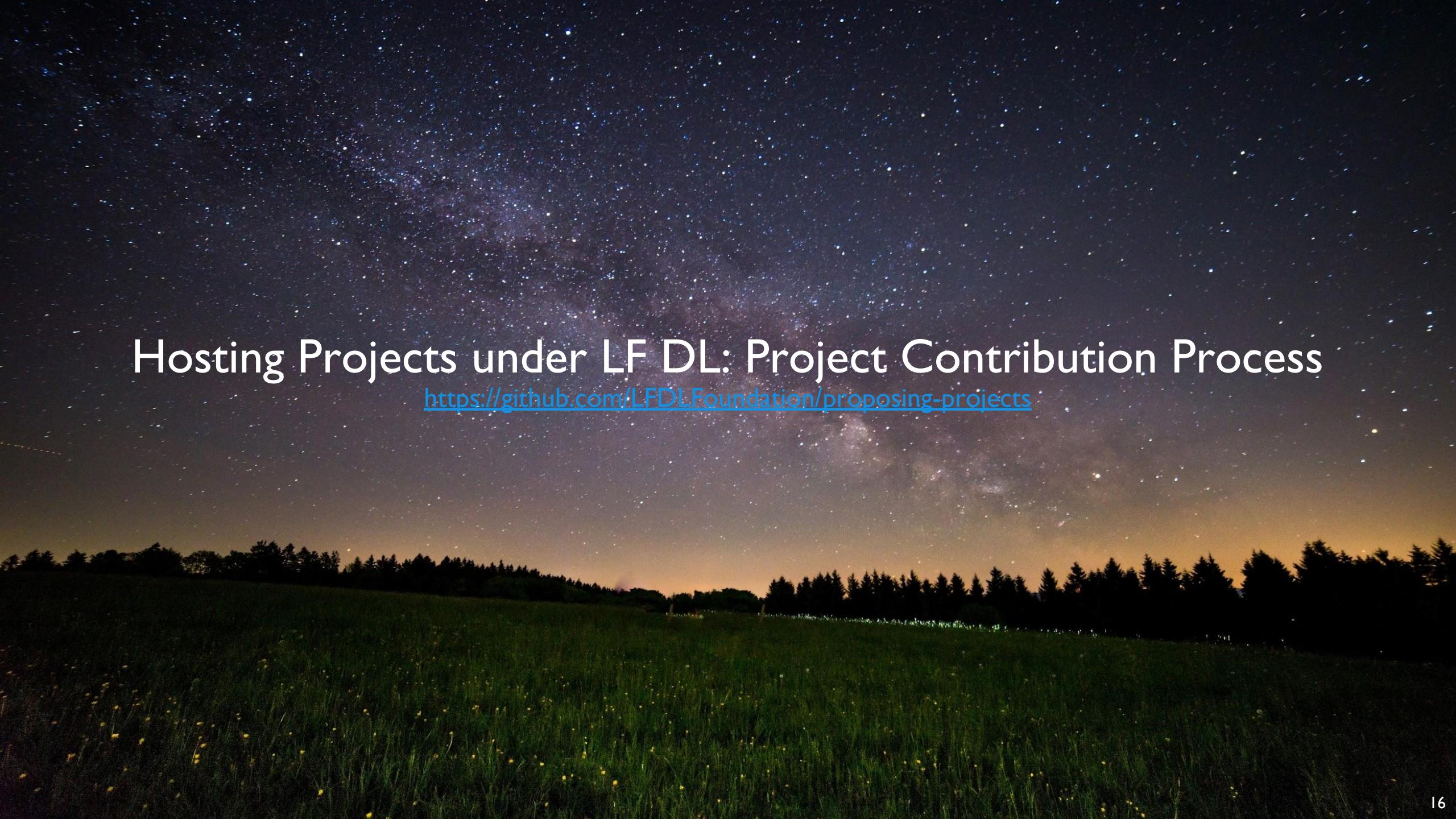
- › Composition:
 - › One appointed voting representative from each Premier Member
 - › Each General Member may appoint a non-voting representative to observe and contribute ideas to the Outreach Committee
- › Responsible for community outreach and marketing strategy for LF DL
- › Meetings over a monthly conference call; all LF DL members are invited and encouraged to attend
 - › <https://lists.deeplearningfoundation.org/g/outreach-committee>

Budget Committee

- › Composition:
 - › Representatives of the Governing Board that volunteer to be a named participant on the Budget Committee.
- › The responsibilities of the Budget Committee include:
 - › Assisting the Treasurer in preparation of annual budgets that adhere to the principles and guidelines established by the Governing Board;
 - › Developing and reporting metrics for the allocation of budget in relation to meeting the priorities of the Governing Board;
 - › Reviewing the progress of the Directed Fund against the annual budget;
 - › Preparing forecasts for future financial needs of the Directed Fund; and such other matters related to finance and the financial operation of the Directed Fund as may be directed to the Budget Committee by the Governing Board.

Legal Committee

- › The Legal Committee consists of members of the Governing Board that wish to participate on the Legal Committee together with their legal counsel.
- › Responsible for the creation of recommendations to the Governing Board in response to questions submitted to the Legal Committee by the Governing Board or the TAC.

The background of the slide is a photograph of a dark night sky filled with numerous stars of varying brightness. Below the horizon, there is a silhouette of a forest line, and in the foreground, there is a dark green grassy field with some small yellow flowers scattered across it.

Hosting Projects under LF DL: Project Contribution Process

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

Linux Foundation Projects

- › The LF currently hosts well over 100 open source projects!
 - › <https://www.linuxfoundation.org/projects/>
- › Projects considering the foundation generally seek:
 - › A neutral host foundation for intellectual property (IP)
 - › Governance and community help
 - › Resources (e.g. events, marketing support, community CI/build infrastructure)
 - › Build momentum within the LF community of 1300+ members
 - › Ability to raise and manage funds (optional)
- › Projects often start with individual devs seeking to elevate their project or orgs interested in working together under a neutral home

Why host a project under an open source foundation?

- › You believe the project will gain wider community adoption if it's no longer solely affiliated with the corporate partner.
- › Several companies are working on very similar projects, and transferring management to an open source foundation would unite people under a common project.
- › There are legal or administrative tasks essential to the health of the project, and it's not clear which current participant should own these tasks. These types of needs typically only arise after a project has already become reasonably established, with an active contributor community and often one or more dedicated corporate partners.

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

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.

We'd like to think of LF DL as a greenhouse growing and sustaining open source AI, ML and DL projects from seed to fruition. The Linux Foundation and LF DL provide the support for open development to occur among a diverse and thriving community, in addition to a number of enabling services that include membership and funding, ecosystem development, legal, PR and marketing, events, and compliance scans.

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

Creating sustainable open source projects requires hard work

| | | | | | | | |
|----|-----------------------|----|----------------------------------|----|---------------------------------------|----|--------------------------|
| 01 | Governance Structure | 02 | Membership Management | 03 | IP Management | 04 | Hosting Infrastructure |
| 05 | Ecosystem Development | 06 | Critical Mass at Launch | 07 | Marketing Platform | 08 | Awareness and Reach |
| 09 | Project Guidance | 10 | Events Support | 11 | Trademark Support | 12 | Independent Neutral Home |
| 13 | Funding Model | 14 | Compliance Scans | 15 | CLA Management | 16 | Creative Services |
| 17 | Dedicated Staff | 18 | Validation from a trusted source | 19 | Collaboration opp with other projects | | |

Our Value Proposition to Projects

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)

A wide-angle photograph of a dark night sky filled with numerous stars of varying brightness. A prominent, hazy band of light, the Milky Way, stretches across the center of the frame. Below the horizon, the silhouette of a dense forest of tall evergreen trees is visible against a faint orange glow from the horizon, likely from city lights or a sunset. In the foreground, a dark, green grassy field with small yellow flowers is visible, sloping up towards the horizon.

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.

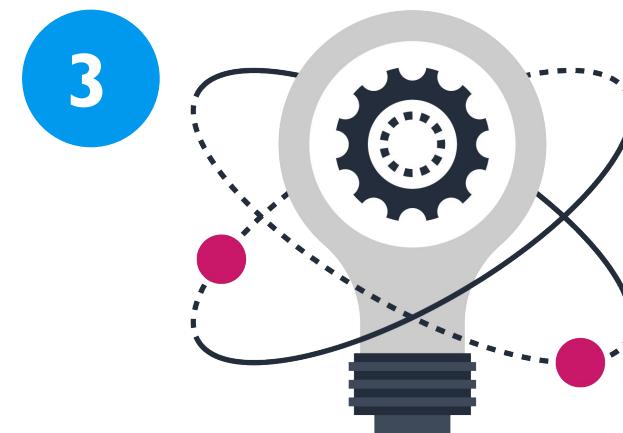
LF DL Membership Provides:



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 |
| Associate Member | Free | Free |

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 representative to the LF DL Governing Board.
- Appoint one representative as a voting member in any subcommittees or activities of the Governing Board.
- Enjoy most prominent placement in displays of membership including website and 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.

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 representative to the LF DL Governing Board per every ten General members, up to three 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.

Associate Membership

Limited to academic and nonprofit institutions respectively and requires approval by the Governing Board

- › Academia
- › Not-for-profit
- › Government agencies
- › Standardization bodies
- › etc.

Free membership.



LF DEEP LEARNING 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 or add new projects.



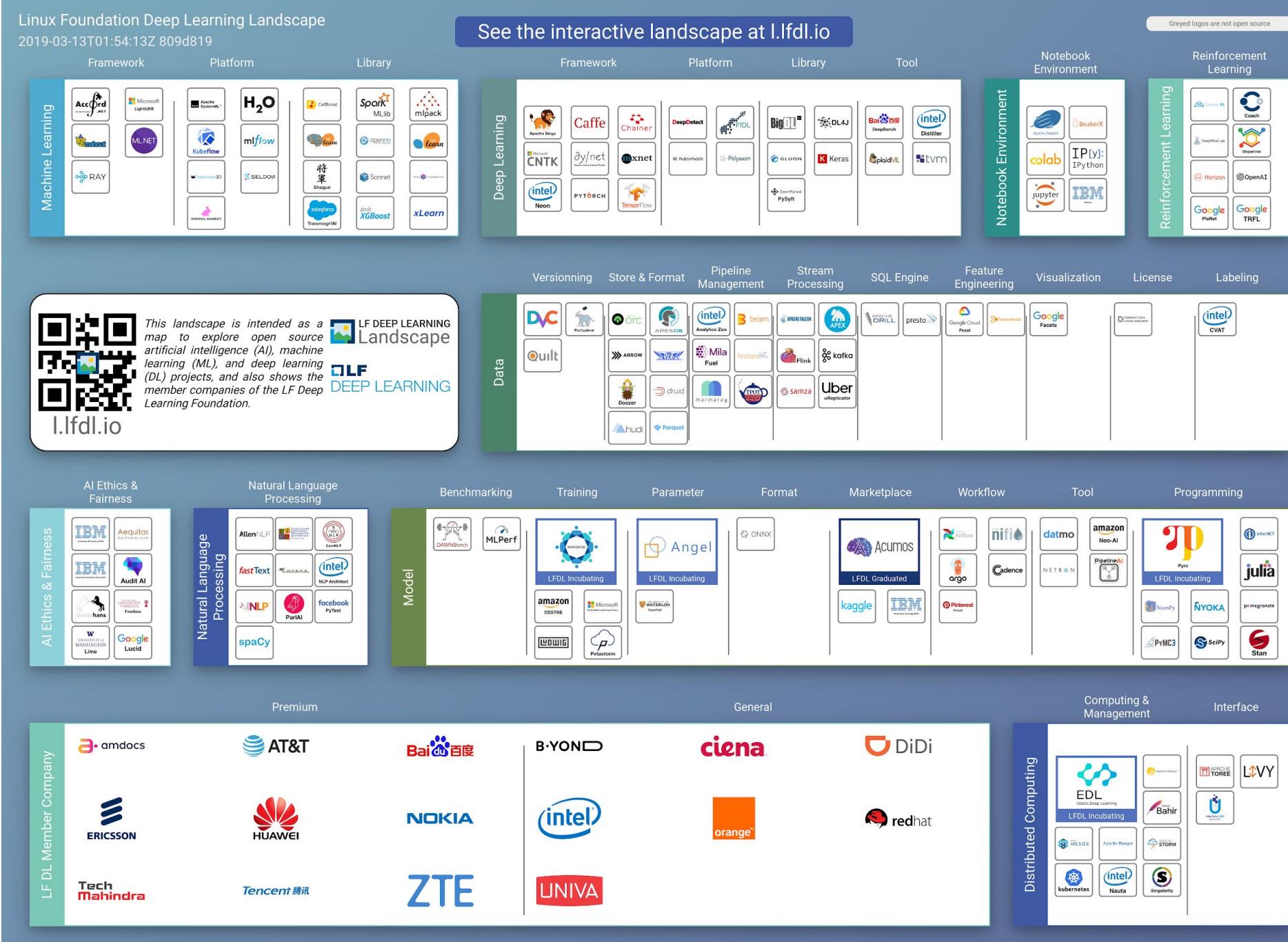
LF DEEP LEARNING Landscape

Mapping the ecosystem of open source AI, ML and DL.

We've added over 60 projects added since launch on December 10, 2018.

Please use it as a reference in your presentations, share with your staff and colleagues, and recommend they review and provide feedback.

<https://github.com/LFDLFoundation/lfdl-landscape>



Joining LF DL Foundation is easy!

Please follow up with Ibrahim Haddad

Web site: <https://lfdl.io>
Email: info@lfdl.io
Twitter: [@LFDeepLearning](https://twitter.com/LFDeepLearning)
Landscape: <http://l.lfdl.io>
GitHub: <https://github.com/LFDLFoundation>
[Getting Involved Guide](#)