

Overview of the LF Deep Learning Foundation

 THE **LINUX** FOUNDATION

 **LF** DEEP LEARNING

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.

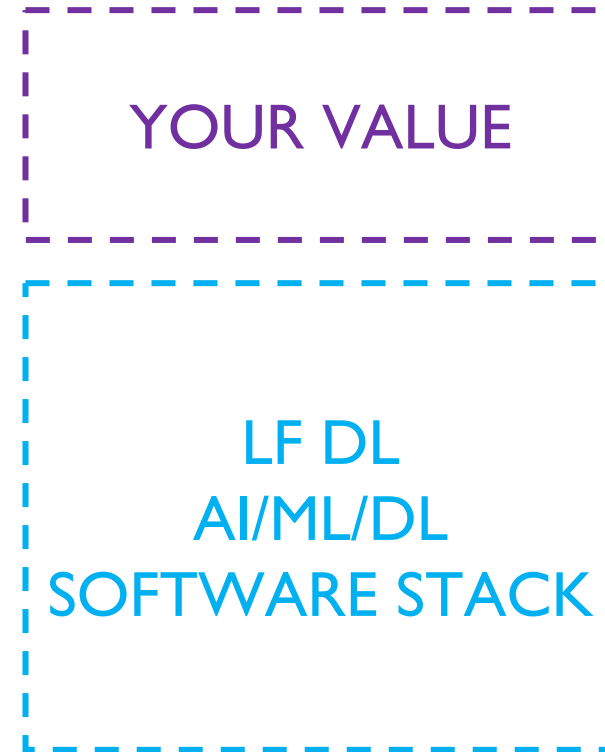
Current Members



The LF DL Ecosystem Exists to Drive Value

Open source has enabled the digital transformation of telecommunications, networking, financial services, automobiles, healthcare, cloud, consumer products, and the explosion of technology platforms.

Open Source AI – this is our time.



Current LF DL Projects



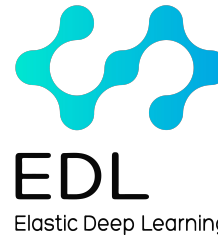
Machine learning platform and marketplace for ML models.

Contributed by AT&T



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

Contributed by Tencent



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

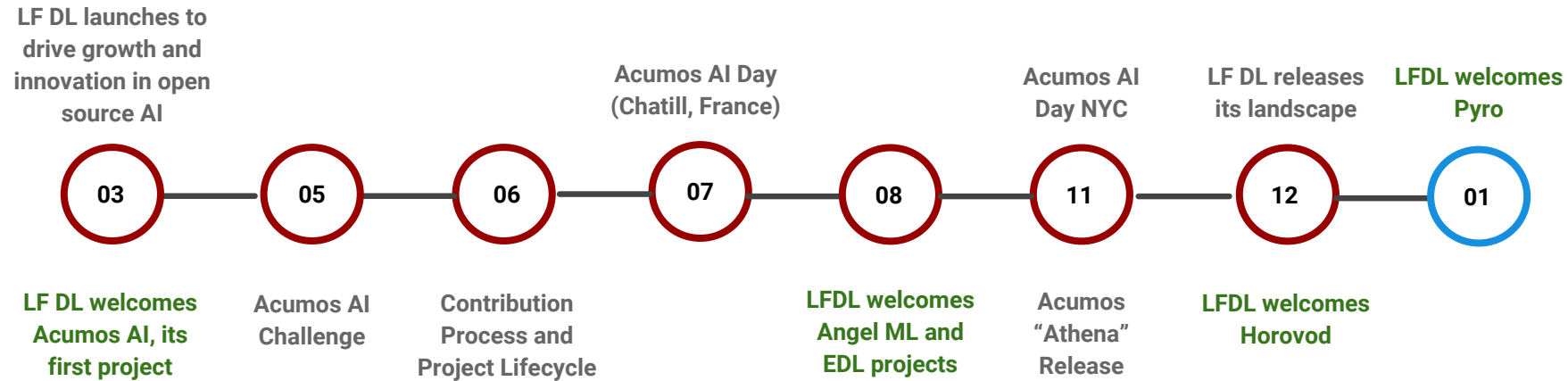
Contributed by Uber

Year in Review

Major Milestones

2018

2019



<https://github.com/LFDLFoundation>



<https://lfdl.io>



info@lfdl.io

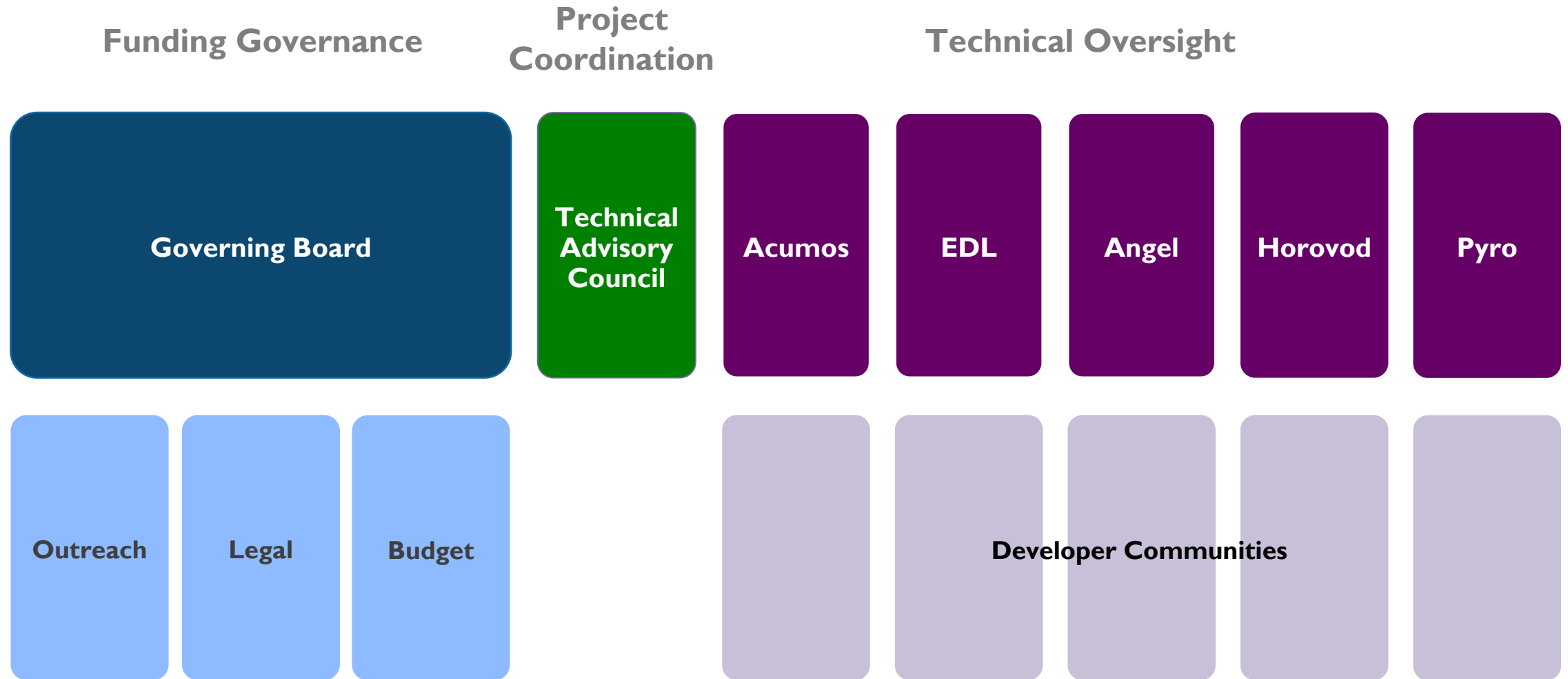


<https://l.lfdl.io>

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



LF DL Detailed Governance

Governing Board

- › Composition:
 - › Appointees of Premier Members
 - › Representative of General Members (elected annually)
 - › TAC Chair (elected annually)
- › Responsible for orchestration and funding of LF DL
- › Meeting monthly

Technical Advisory Council (TAC)

- › Membership on the TAC is made up of Premier Member appointees and a representative of certain of the supported technical projects.
- › The TAC serves a coordination role:
 - › Facilitates communication across and among the supported technical projects; and
 - › Communicates needs and requirements of the projects to the Governing Board (The chair of the TAC is a member of the Governing Board)
 - › Onboards new projects, assists in progression of existing projects, and reviews projects annually
 - › Defines and maintains the technical vision for the LFDL Foundation
 - › Approves new projects within the scope for LFDL set by the Governing Board
 - › Creates a conceptual architecture for the projects, aligning projects, removing or archiving projects
 - › Defines common practices to be implemented across LFDL projects
- › Open to public participation
 - › Meetings take place every 2 weeks; are recorded and fully open to the 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 for LF DL

- › Meetings are every two weeks, public, and all members are invited to send representatives

- › <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.

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



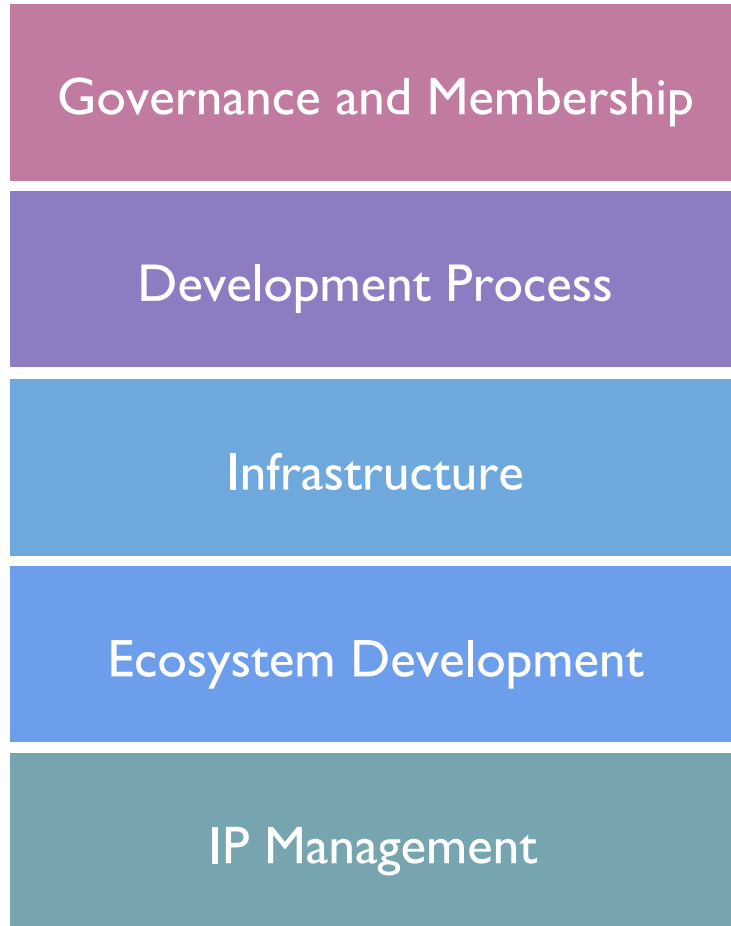
LF Deep Learning has a modular approach to hosting projects.

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

Creating sustainable open source projects requires real work



LF DL Core Support Areas for Projects

- › Offer a legal framework for IP and trademark management in which commercial companies can work with open source projects and contributors.
- › Offer technical services, such as software repositories and issue tracking, mailing lists, file servers, code signing certifications, technical mentorship, etc.
- › Offer support with business operations and governance, which includes financial and banking services, membership management, communications and PR around projects, and event services.

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.

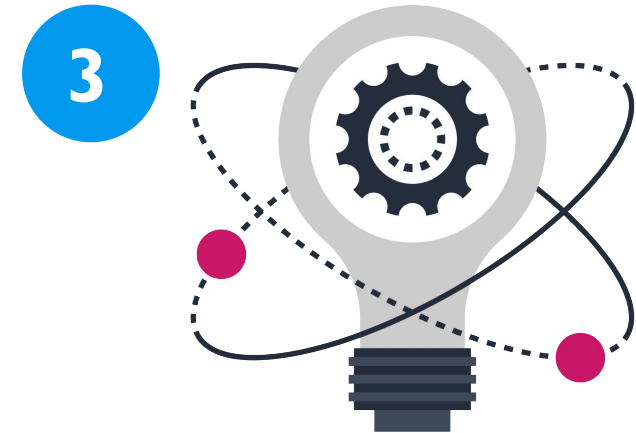
LF DL Membership Provides:



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 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.

The logo icon for LF Deep Learning Landscape is a white square containing a stylized landscape. It features a grey mountain range at the bottom, a grey circle representing the sun or moon in the upper right, and a white path leading from the bottom left towards the mountains.

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.

Joining LF DL Foundation is easy!

Please follow up with [Ibrahim Haddad](#)

Web site: <https://lfdl.io>

Email: info@lfdl.io

Landscape: <http://l.lfdl.io>

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