

How Linux Foundation is Changing the (Machine-Learning) World

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Chairperson, LFDL Technical Advisory Council

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

LFDL goals



Neutral Environment

Provide a **neutral environment** and an **open governance** that fosters **collaboration** and cross-pollination

Harmonization, Interoperability

Increase efforts to **harmonize** open source projects and **reduce fragmentation**; increase the **interoperability** among projects

Ethics and Fairness

Become the **home** of open source AI efforts in **ethics and fairness**, and an **advocate** for these principles

Data, Models Tools and Marketplace

Host open source AI models with supporting tools; publish best practices; offer a **marketplace** for **machine learning Models**

Funding and Awareness

Provide a **funding** model for **key projects**; increase awareness of LF DL projects

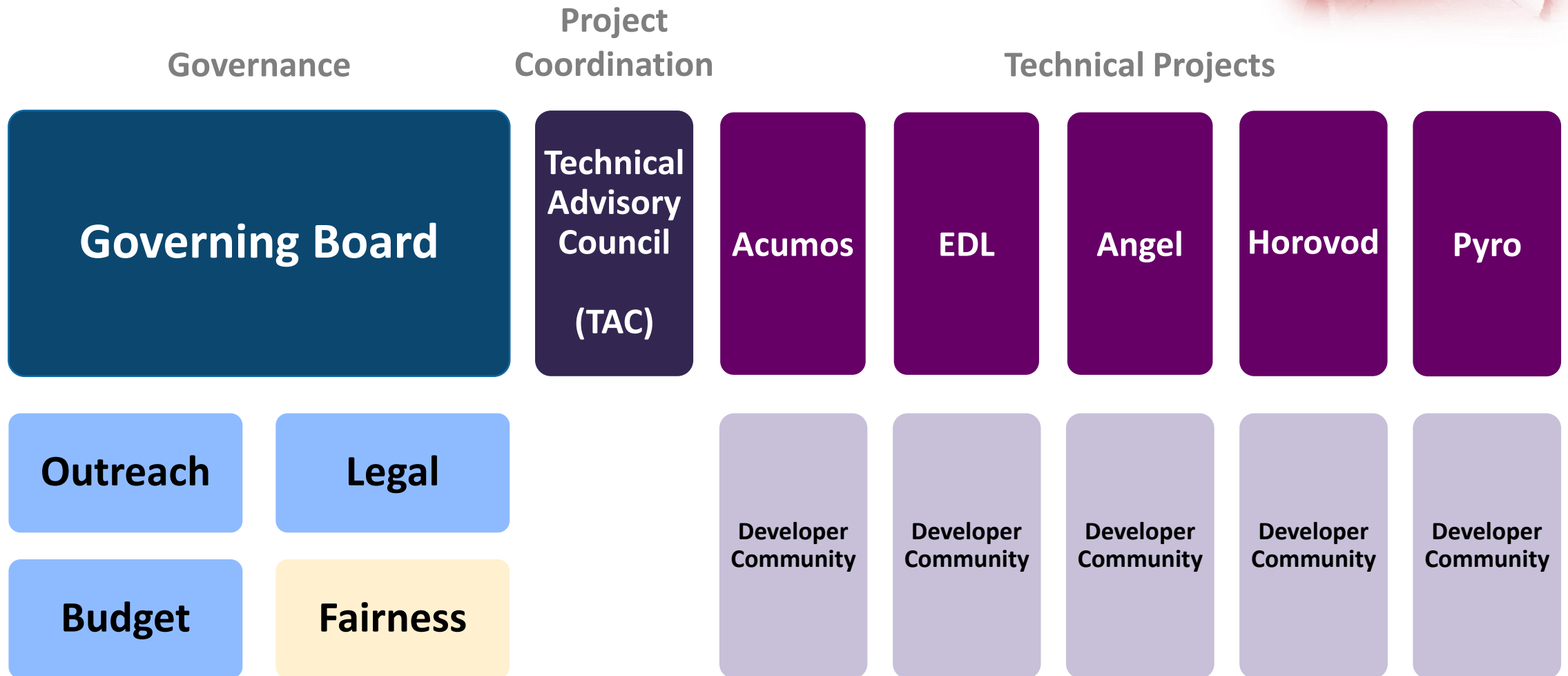
Governance

Single funding to support multiple technical projects

Technical projects have their own technical governance



LFDL structure



Technical Advisory Council (TAC)



Membership

Coordination role:

- Facilitates **communication across** and among the supported **technical projects**
- **Communicates needs and requirements** of the projects to the **Governing Board**
- **Onboards new projects**, assists in progression of existing projects, and reviews projects annually
- **Vote on approving new projects** joining the LF DL as incubation or graduate projects
- Defines and maintains the technical **vision** for the LF DL Foundation
- Creates the **landscape** and a **conceptual architecture** for the projects
- Defines **common practices** to be implemented across LF DL projects
- **Meetings** every 2 weeks, meetings are recorded and open to the general public
- <https://lists.deeplearningfoundation.org/g/tac-general/wiki/Home>

Membership



Premier



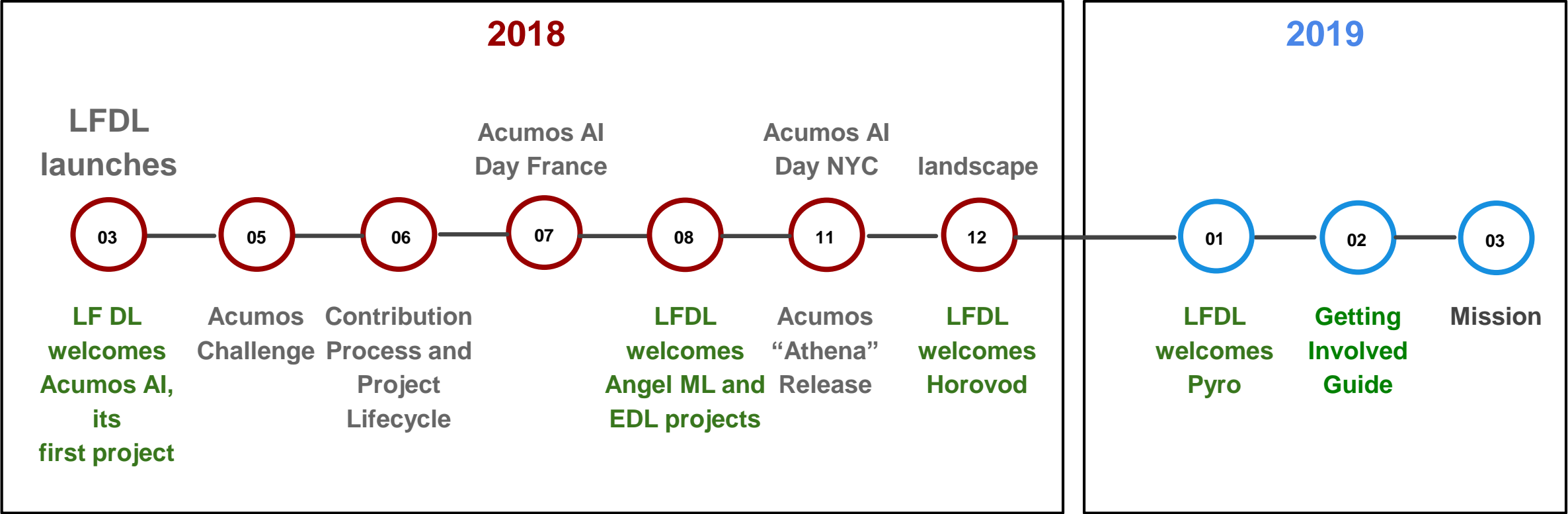
General



Associate

Year in review

Major milestones



LFDL PROJECTS

Projects



The goal is to be able to build a complete AI stack with LFDL hosted projects that are tightly integrated

Acumos AI



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

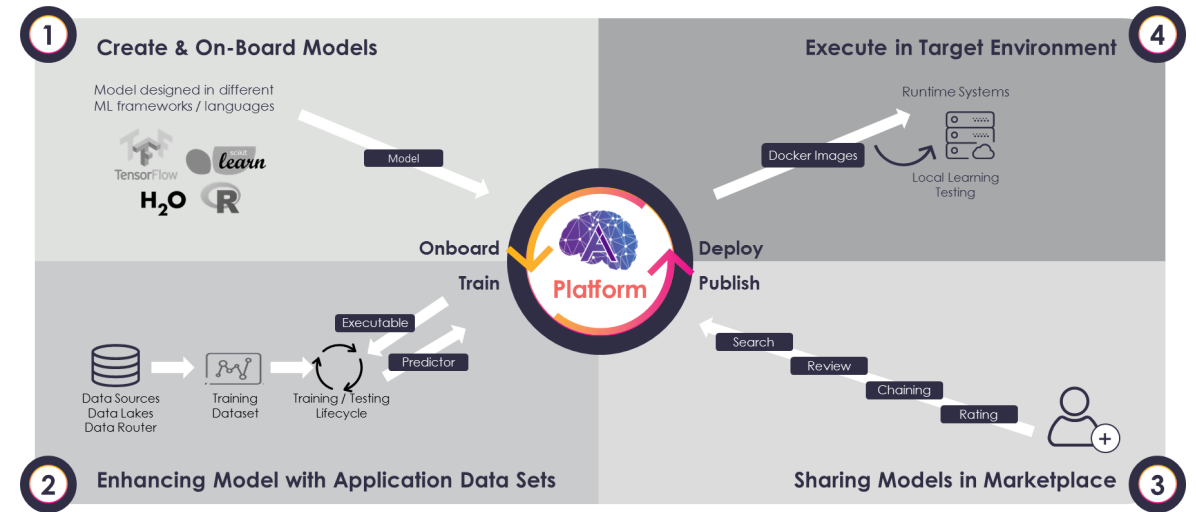
3K+ commits, 69 contributors,

38 committers

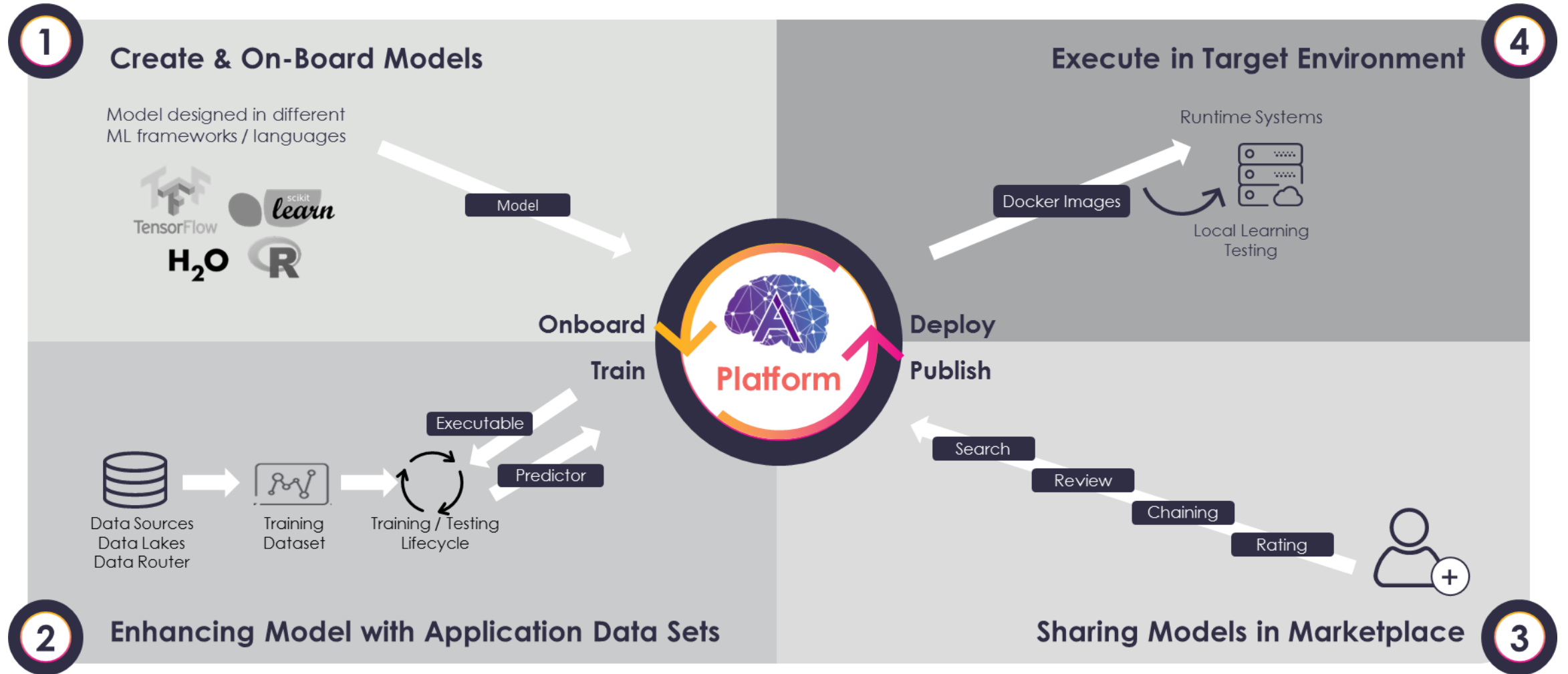
License: Apache-2.0

Description:

Acumos AI is a distributed marketplace for ML models, that makes it easy to build, share, and deploy AI apps. Acumos standardizes the infrastructure stack and components required to run an out-of-the-box general AI environment. This frees data scientists and model trainers to focus on their core competencies and accelerates innovation



Acumos platform



Angel



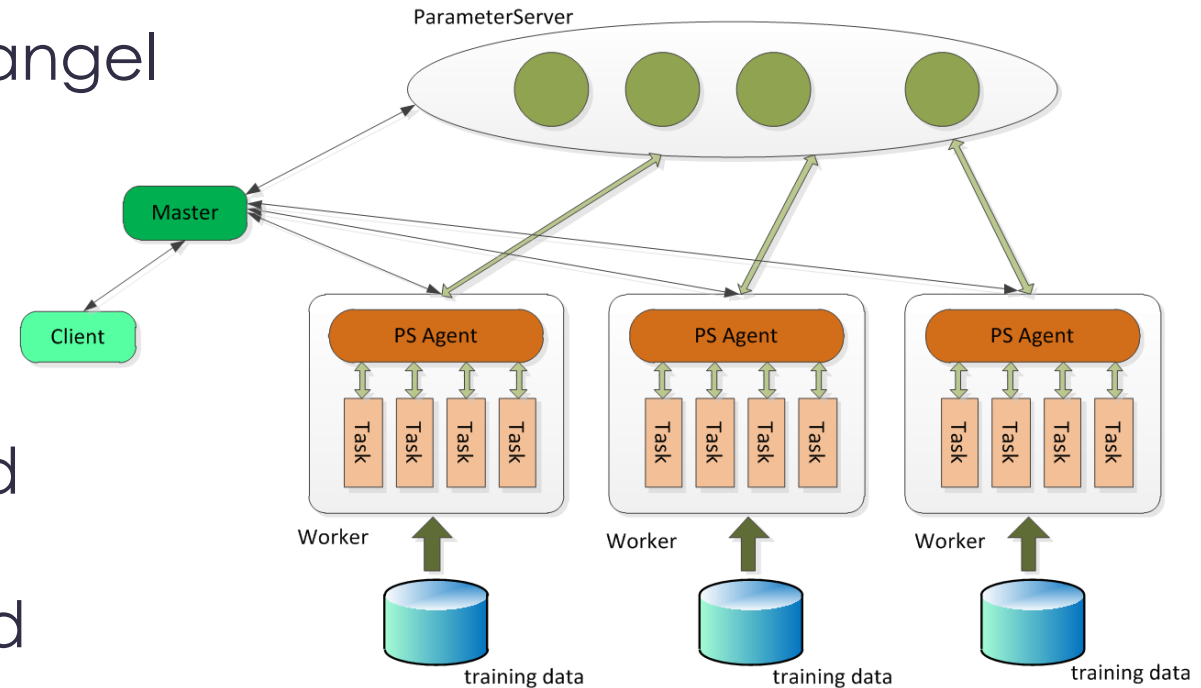
GitHub: <https://github.com/Angel-ML/angel>

>1,800 commits, 33 contributors

License: Apache-2.0

Description:

Angel is a high-performance distributed machine-learning platform based on Parameter Server, running on YARN and Apache Spark. It is tuned for performance with big data/model and has a wide range of applicability and stability, demonstrating increasing advantage in handling higher dimension model. Angel supports big and complex models with billions of parameters



EDL – Elastic Deep Learning



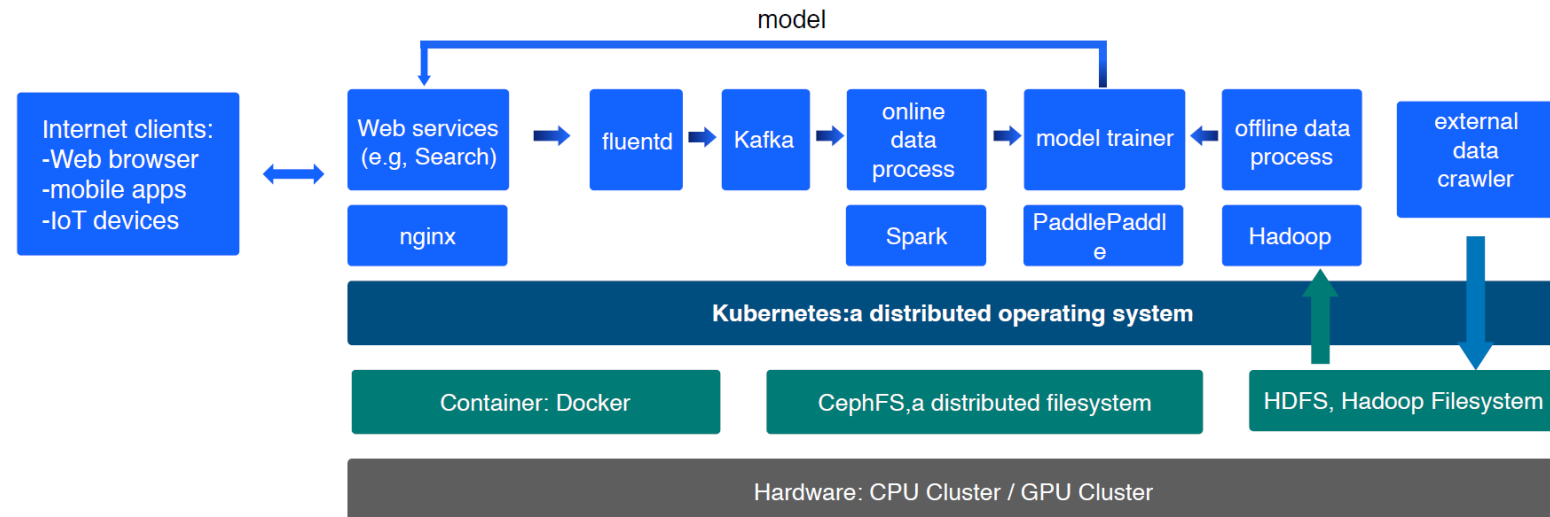
GitHub: <https://github.com/paddlepaddle/edl>

~1,000 commits, 15 contributors

License: Apache-2.0

Description:

EDL is an Elastic Deep Learning framework designed to help Deep Learning Cloud Service providers to build cluster cloud services using different deep learning frameworks



Horovod



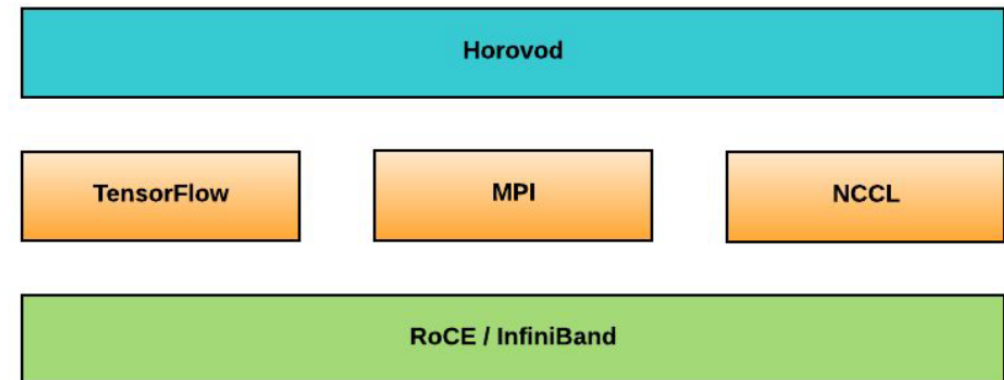
GitHub: <https://github.com/horovod/horovod>

~260 commits, 41 contributors

License: Apache-2.0

Description:

Horovod is a distributed training framework for TensorFlow, Keras, PyTorch, and MXNet. The goal of Horovod is to make distributed Deep Learning fast and easy to use



Pyro



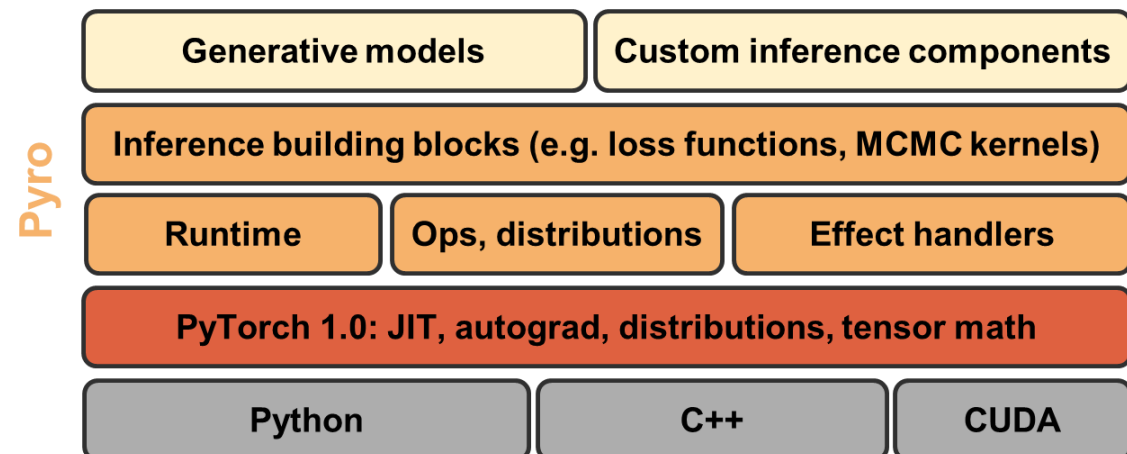
GitHub: <https://github.com/pyro-ppl/pyro>

~1,500 commits, 53 contributors

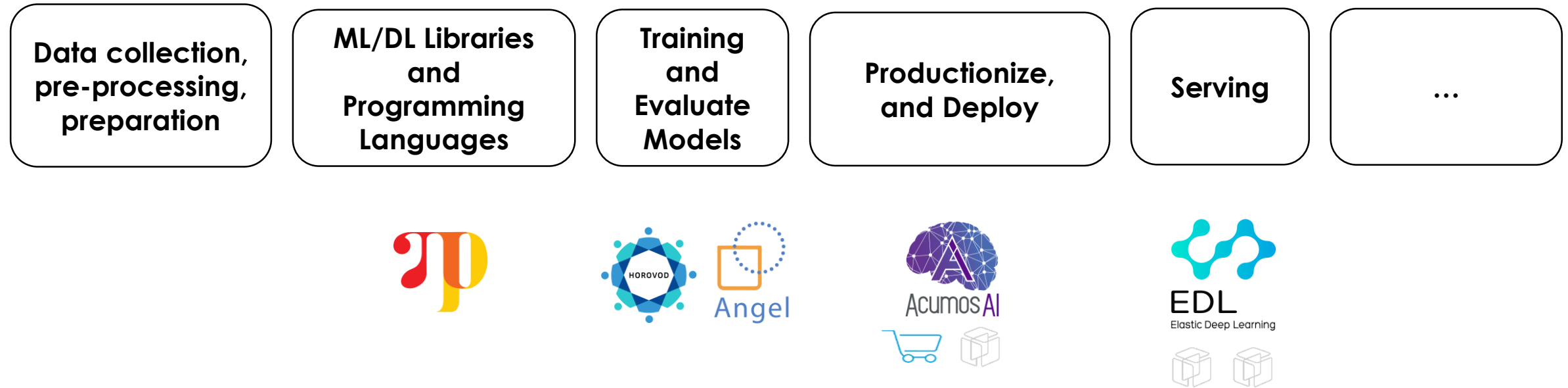
License: Apache-2.0

Description:

Pyro is a flexible, scalable deep probabilistic programming library built on PyTorch



LFDL projects in an ML workflow





LF DEEP LEARNING Landscape



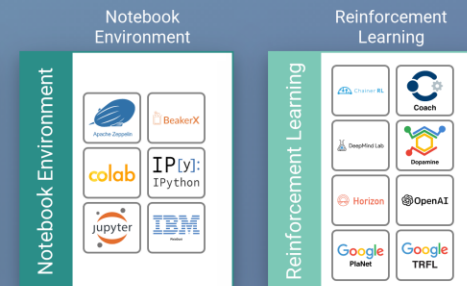
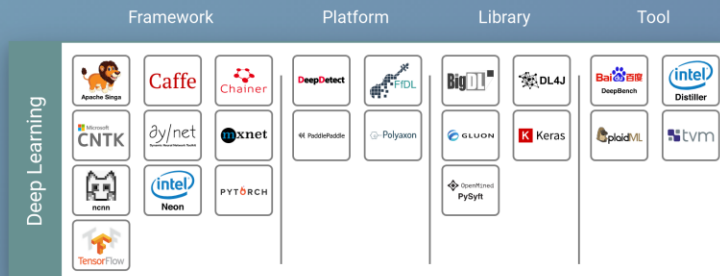
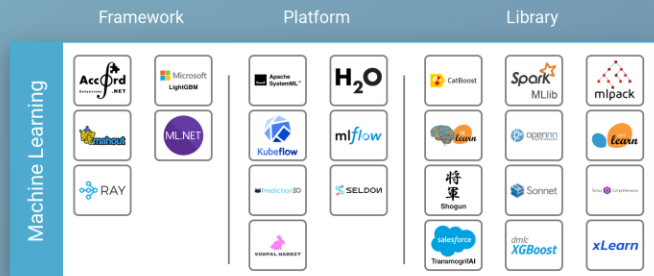
We've added several dozens of projects since launch in Dec. 2018

Please [open](#) a pull request to correct any issues or add new projects

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

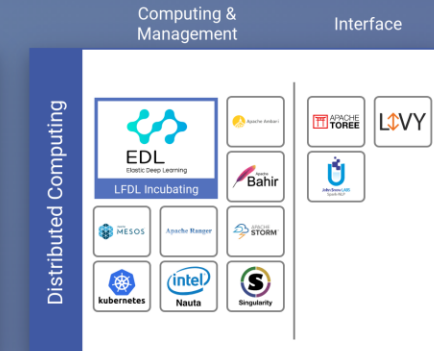
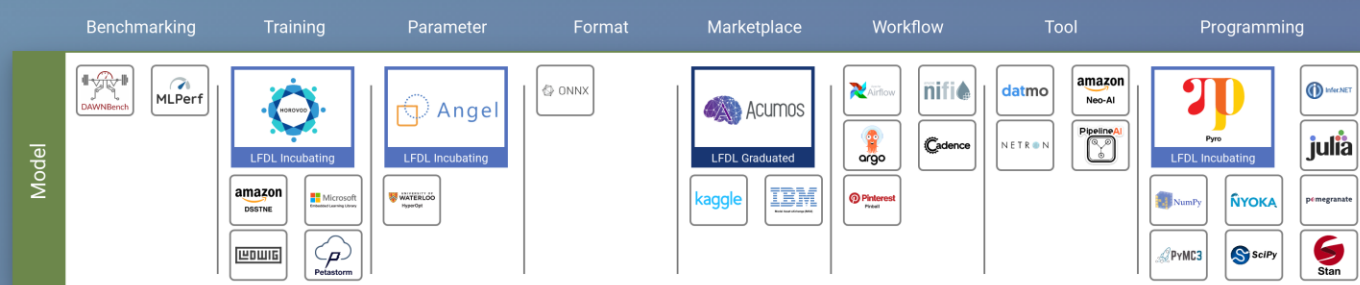
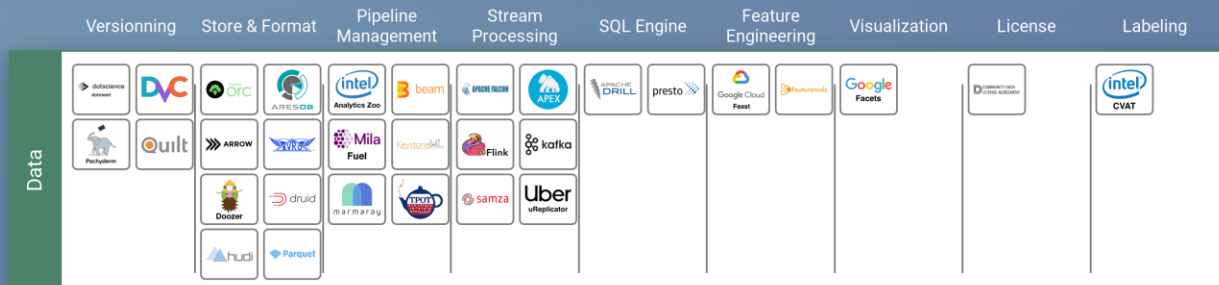
See the interactive landscape at l.fdl.io

Greedy logos are not open source.



This landscape is intended as a map to explore open source artificial intelligence (AI), machine learning (ML), and deep learning (DL) projects, and also shows the member companies of the LF Deep Learning Foundation.

l.fdl.io



Thanks You

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 <https://l.lfdl.io>

 <https://github.com/LFDLFoundation>

 <https://lfdl.io>