

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

LF DL 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

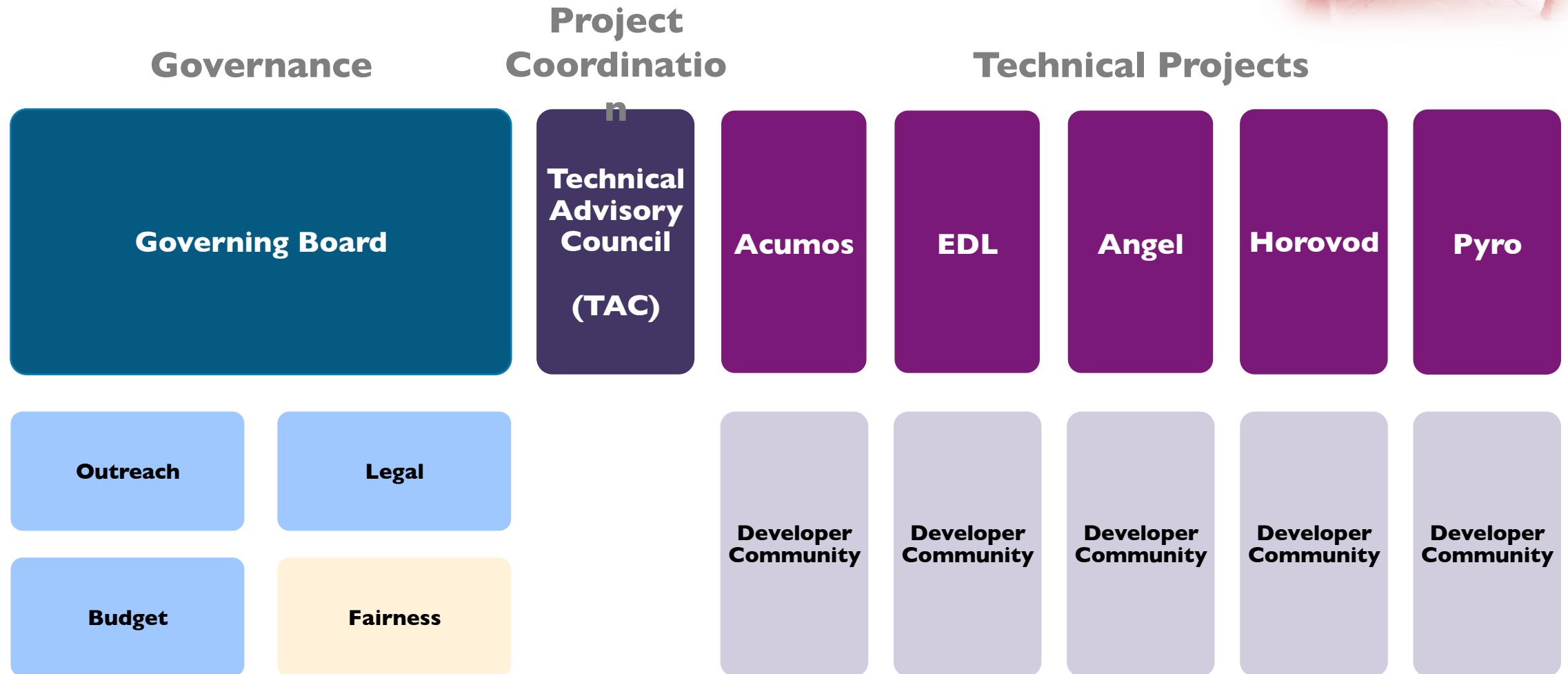
Governance

Single funding to support multiple technical projects

Technical projects have their own technical governance



LFDL structure



Technical Advisory Council (TAC)



Membership

Coordination role:

- Facilities **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



2018

LF DL launches

03

05

06

07

08

11

12

LF DL welcomes Acumos AI, its first project

Acumos Contribution Challenge Process and Project Lifecycle

Acumos AI Day France

Acumos AI Day NYC

landscape

LF DL welcomes Angel ML and EDL projects

Acumos “Athena” Release

2019

LF DL welcomes Pyro

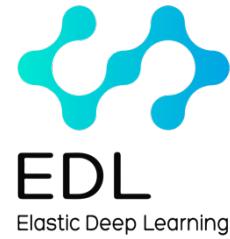
Getting Involved Guide

Mission



LFDL PROJECTS

Projects



Tencent 腾讯



Uber

Uber

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



Acumos AI

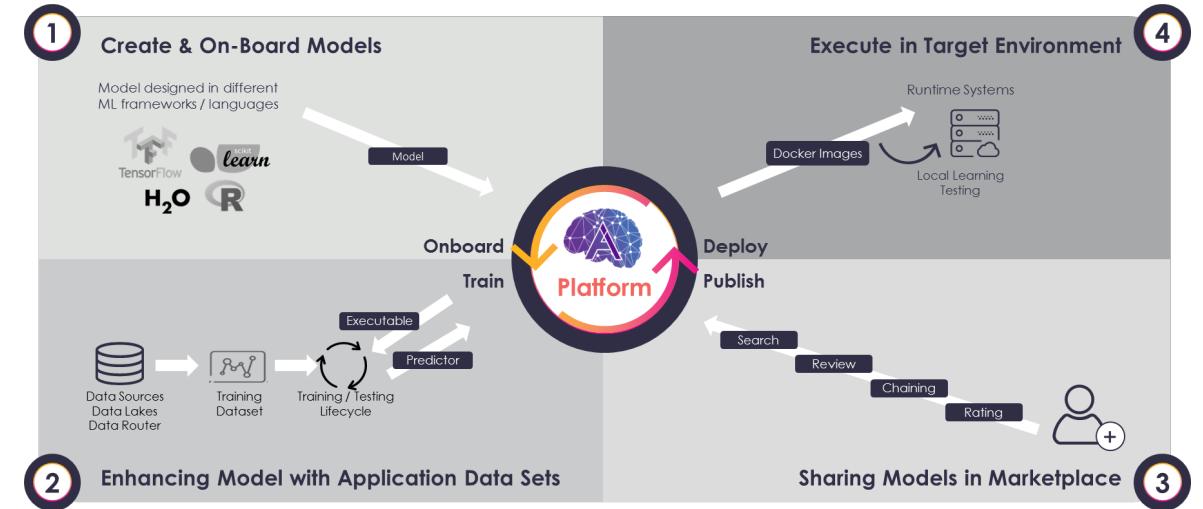
GitHub: <https://github.com/acumos>

3K+ commits, 69 contributors,
38 committers

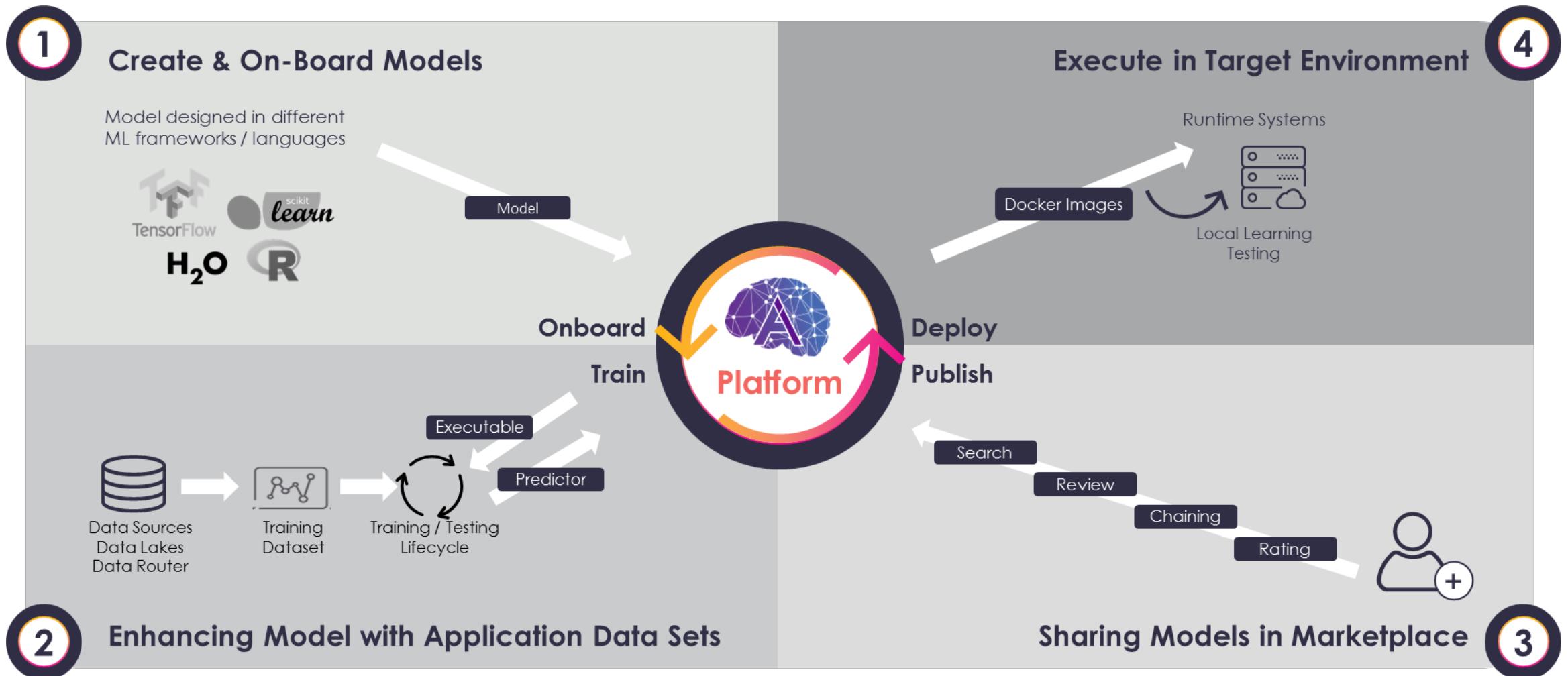
License: Apache-2.0

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



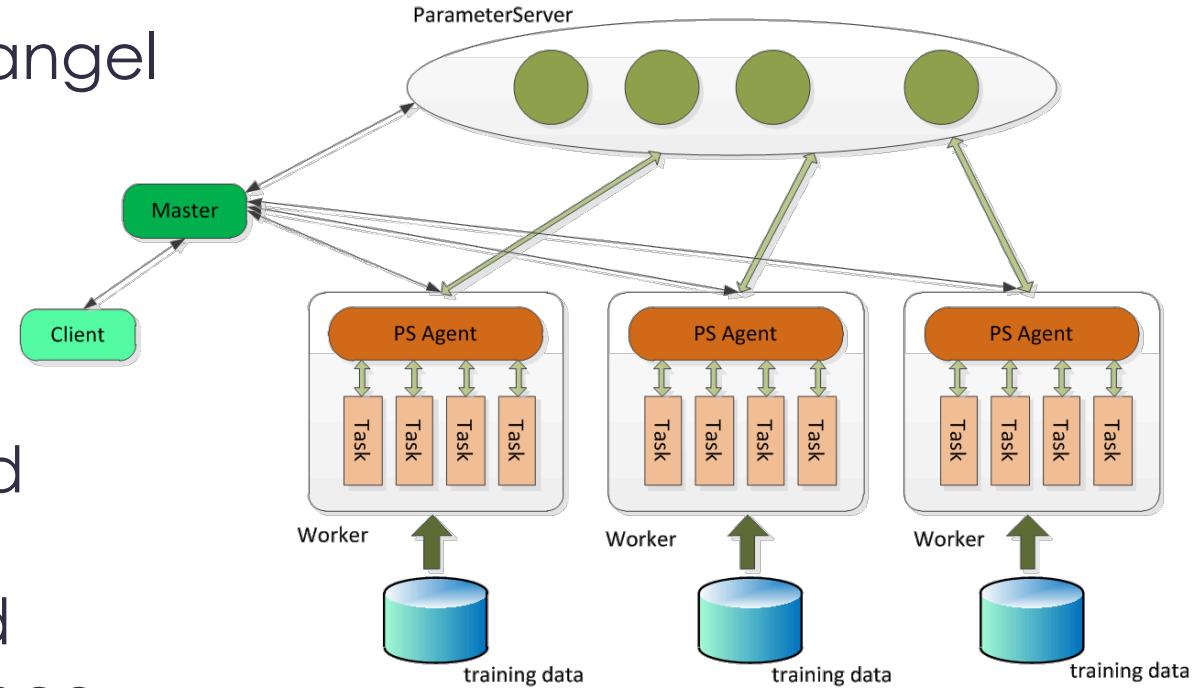
GitHub: <https://github.com/Angel-ML/angel>

>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



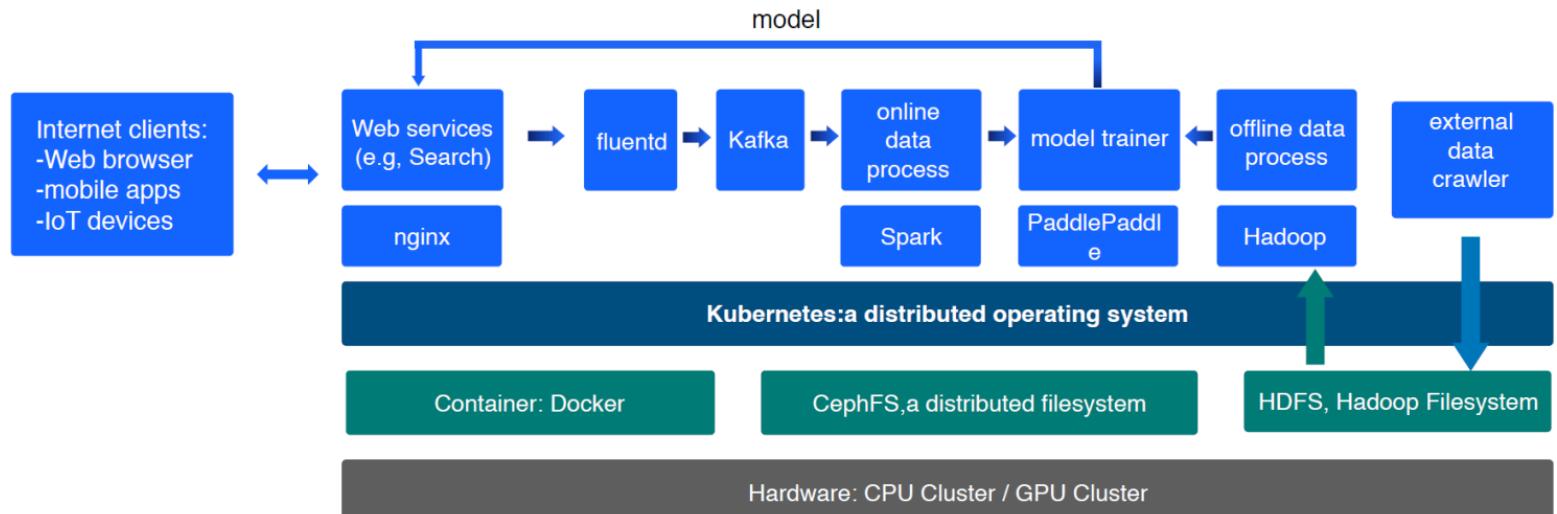
GitHub: <https://github.com/paddlepaddle/edl>

~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



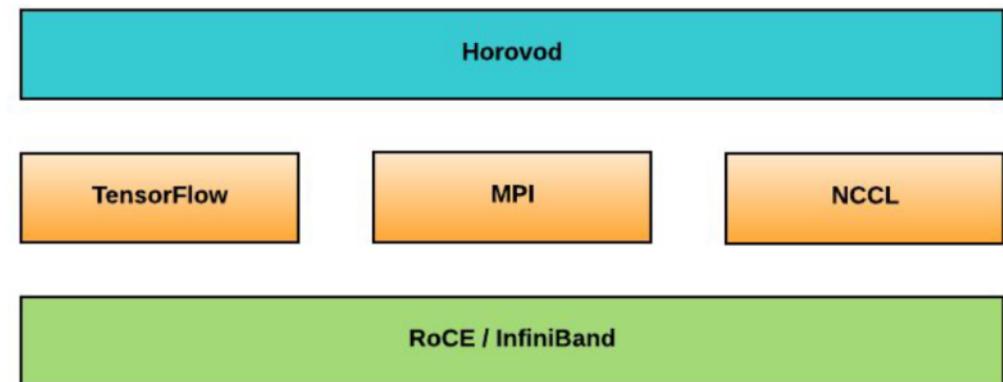
GitHub: <https://github.com/horovod/horovod>

~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



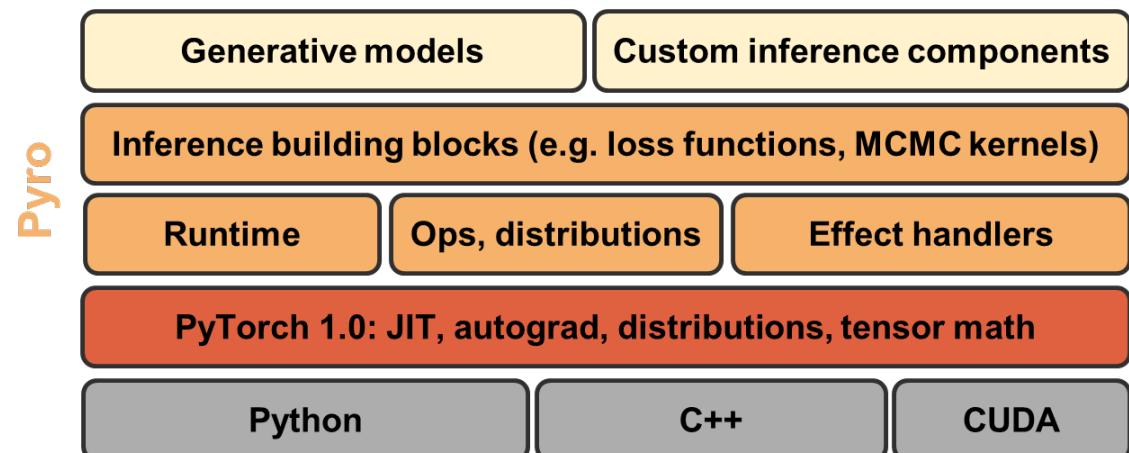
GitHub: <https://github.com/pyro-ppl/pyro>

~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

Data collection,
pre-processing,
preparation

ML/DL Libraries
and
Programming
Languages

Training
and
Evaluate
Models

Productionize,
and Deploy

Serving

...





LF DEEP LEARNING Landscape



Mapping the ecosystem of open source AI, ML & DL

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

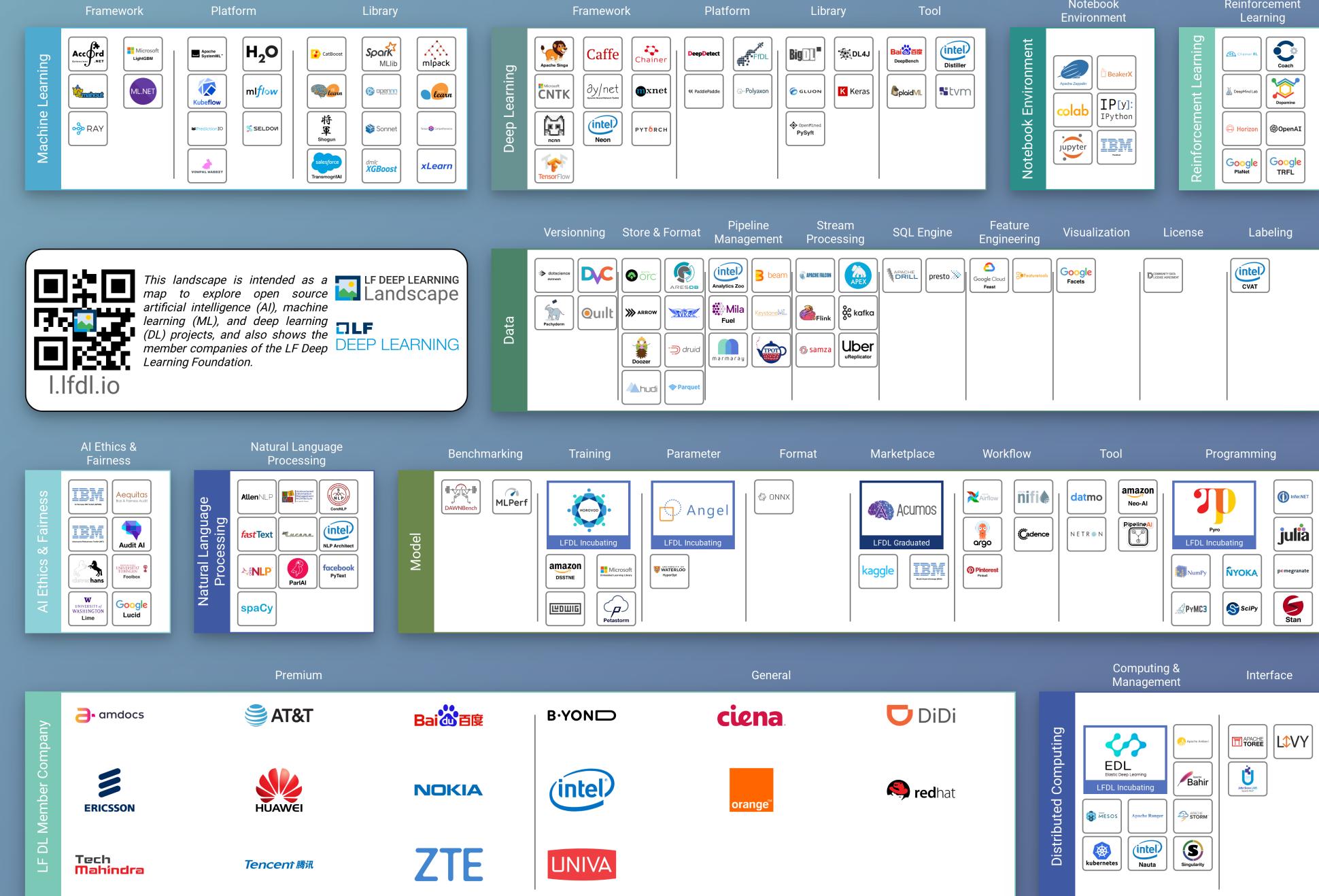
Please open a pull request to correct any issues or add new projects

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

Linux Foundation Deep Learning Landscape
2019-03-29T04:56:52Z 7730716

See the interactive landscape at lfdl.io

Greyed logos are not open source



Thanks You

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📷 <https://l.lfdl.io>

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

🌐 <https://lfdl.io>