Meeting of the Technical Advisory Council (TAC)

March 25, 2021

LF AI & DATA

Anti-Trust Policy

- Linux Foundation meetings involve participation by industry competitors, and it is the intention of the Linux Foundation to conduct all of its activities in accordance with applicable antitrust and competition laws. It is therefore extremely important that attendees adhere to meeting agendas, and be aware of, and not participate in, any activities that are prohibited under applicable US state, federal or foreign antitrust and competition laws.

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Recording of Calls

Reminder:

TAC calls are recorded and available for viewing on the TAC Wiki

Reminder: LF AI & Data Useful Links

- Web site: lfaidata.foundation
- Wiki: wiki.lfaidata.foundation
- GitHub: github.com/lfaidata
- Landscape: https://landscape.lfaidata.foundation or https://l.lfaidata.foundation
- Mail Lists: https://lists.lfaidata.foundation
- Slack: https://slack.lfaidata.foundation
-
- LF AI Logos: https://github.com/lfaidata/artwork/tree/master/lfaidata
- LF AI Presentation Template: https://drive.google.com/file/d/1eiDNJvXCqSZHT4Zk_-czASlz2GTBRZk2/view?usp=sharing
-
- Events Page on LF AI Website: https://lfaidata.foundation/events/
- Events Calendar on LF AI Wiki (subscribe available): https://wiki.lfaidata.foundation/pages/viewpage.action?pageId=12091544
- Event Wiki Pages: https://wiki.lfaidata.foundation/display/DL/LF+AI+Data+Foundation+Events

Agenda

- Roll Call (5 mins)
- Approval of Minutes from March 11 (5 mins)

- Incubation Project Proposal (40 minutes)
  - Substra Framework (Eric Boniface)

- LF AI General Updates (5 minutes)
- Open Discussion (5 minutes)

TAC Voting Members

* = still need backup specified on wiki

Board Member	Contact Person	Email
AT&T	Anwar Atfab	anwar@research.att.com
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Egeria	Mandy Chessell	mandy_chessell@uk.ibm.com
Horovod	Travis Addair*	taddair@uber.com
ONNX	Jim Spohrer (Chair of TAC)	spohrer@us.ibm.com
Pyro	Fritz Obermeyer*	fritz.obermeyer@gmail.com

Approval of March 11th, 2021 Minutes

Draft minutes from the March 11h TAC call were previously distributed to the TAC members via the mailing list

Proposed Resolution:

- That the minutes of the March 11th meeting of the Technical Advisory Council of the LF AI & Data Foundation are hereby approved.

Incubation Project Proposal - Substra Framework

Eric Boniface <eric.boniface@substra.org>
with Camille Marini <camille.marini@owkin.com>
Clément Mayer <clement.mayer@substra.org>
Jérôme Chambost <jerome.chambost@apricity.life>
Mathieu Galtier <mathieu.galtier@owkin.com>

LF AI & DATA

Incubation Project Proposal: Substra Framework

Substra framework is a low-layer tool, offering secure, traceable, distributed orchestration of machine learning tasks among partners. It aims at being compatible with privacy-enhancing technologies to complement their use to provide efficient and transparent privacy-preserving workflows for data science. Its ambition is to make new scientific and economic data science collaborations possible.

Presenter: Eric Boniface <eric.boniface@substra.org>

Resources:

Github: https://github.com/SubstraFoundation
Project Level: Incubation
Proposal: TBD - https://github.com/lfai/proposing-projects/tree/master/proposals

Substra
Foundation

Towards trustworthy data science

Substra Framework @ LF AI & Data

Presentation at LF AI & Data TAC

Last update: March 2021
Confidentiality status: public

Agenda

Why privacy-preserving federated learning? (Mathieu Galtier, CPO @ Owkin, and Eric Boniface, director @ Substra Foundation)

Substra Framework (Camille Marini, CTO @ Owkin)

- What problems does Substra solves?
- What Substra is not and doesn't do
- Key features
- Underlying architecture

Making and use of the framework (Eric Boniface) - A glimpse at HealthChain and MELLODDY

User perspective and real use cases (Jérôme Chambost, AI team lead @ Apricity, and Eric Boniface) - Apricity's AI strategy leveraging Substra Framework

Why contributing Substra Framework to be an LF AI & Data hosted project? (Mathieu Galtier)

Substra Foundation in short

- A non-profit dedicated to collaborative, responsible, trustworthy AI
- With a focus on 2 thematics: privacy-preserving federated learning (PPFL), responsible and trustworthy AI (RTAI)
- Started 2018, 3 full-time staff, 5 main projects:

Current reach:
FR mainly, EU timidly

focus of this presentation

- Substra: a framework for orchestrating distributed ML tasks in a secure, traceable way

core dev by Owkin

- mplc: a lib to emulate FL scenarios, benchmark learning strategies & contributivity methods

- RT initiative

core dev by Substra F. + community

2 USE CASES

HealthChain (FR): PPFL on clinical data, 9 partners, 10m€ budget

MELLODDY (EU): PPFL on drug discovery data, 17 partners incl. 10 global pharma companies, 18m€ budget

co-initiated by Owkin & Substra F.

Owkin in Short

- A VC backed startup for Federated Learning to accelerate medical research
- Focus on Federated Learning and predictive models as clinical solutions for the healthcare sector
- Started 2016, ~100 full time staff
- CPO and CTO are the creators of Substra framework and board members of Substra Foundation

Team of ~10 Software Engineers which design, implement and maintain the Substra framework

Deployment of software in several consortia (public / private): with European hospitals and Pharmaceutical Companies

Has passed several audits for Substra Framework

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Why privacy-preserving federated learning?

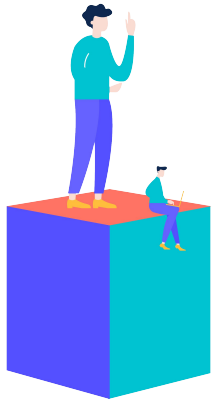
Context overview

Why privacy-preserving federated learning? Problem statement

AI potential

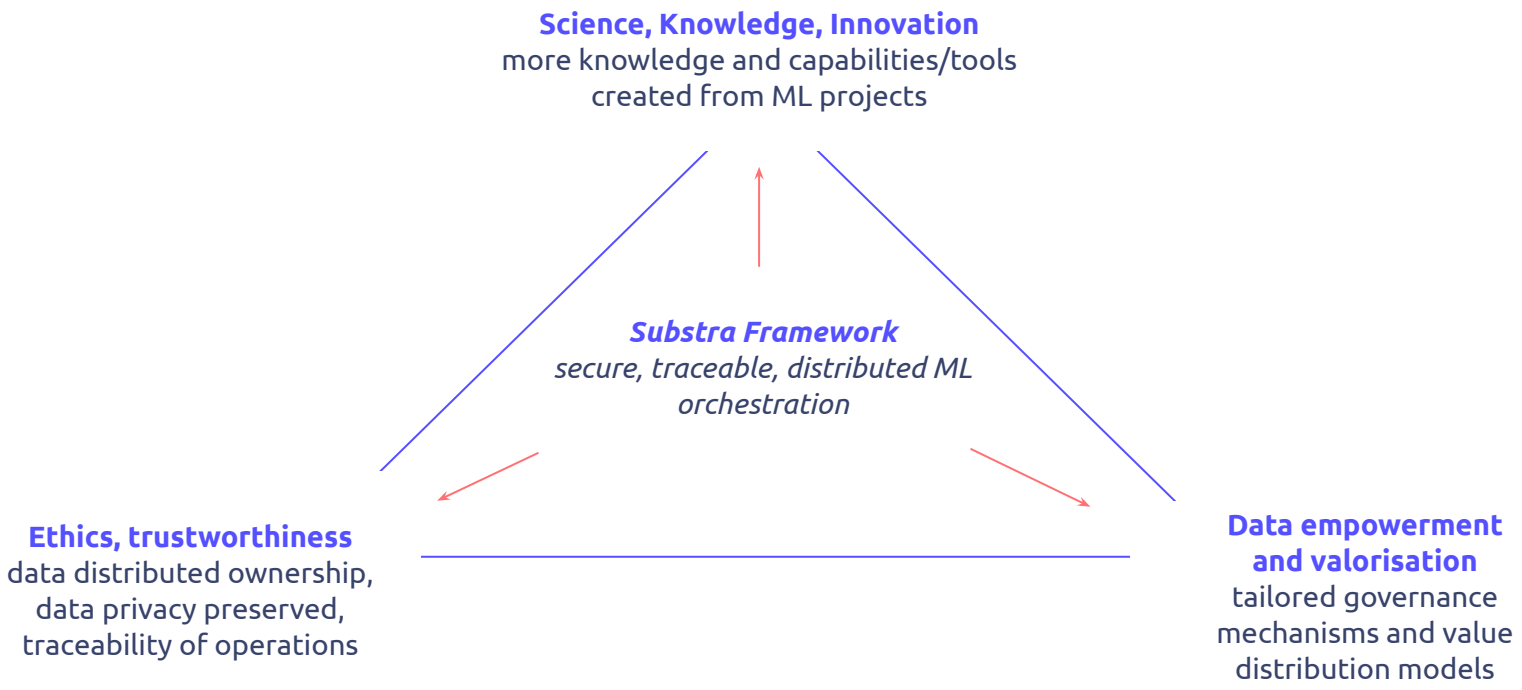
vs.

Scattered data silos
/ data gravity



Strong privacy
requirements

More sustainable and impactful data science collaborations



What layer is Substra focused on?

Upper layers

Data cataloguing

Compliance with PII regulations

Data engineering, pre-processing

Data formatting

DATA

Data collection

Sector-specific knowledge

Privacy enhancement techniques (DP, FHE, SMPC…)

Distributed learning strategies and optimizations

Data science modelling

DATA SCIENCE

Lower layers

Implementing and operating infras

Quality certification (e.g. ISO)

SW for secure, traceable, distributed orchestration of ML tasks

Implementing and operating a trustless network of partners

HW & SW for storage & computing infras

INFRAS HW & SW, NETWORK, OPERATIONS

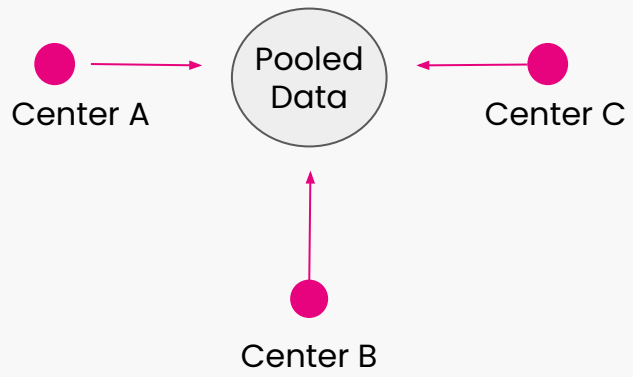
Substra Framework

A framework for orchestrating ML tasks in a distributed, traceable, secure way

Machine Learning and Sensitive Data

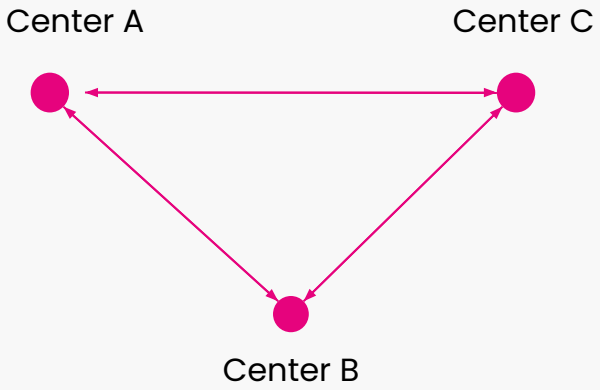
Data pooling implies a reduced control and governance of data owners

No transparency on how the algorithm is trained and how the data are used



STANDARD APPROACH

Requires data pooling and central coordination



DISTRIBUTED LEARNING

Only model / model updates travel, while data stays onsite

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Substra Framework

Framework for ML orchestration
on decentralized sensitive data

Data privacy

Traceability

Data type agnostic

Algorithm agnostic

ML framework agnostic

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NODES

Compute Resources

Data Storage

Node A

Node E

Node C

Node B

Node D

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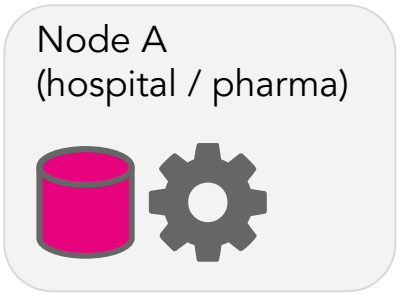
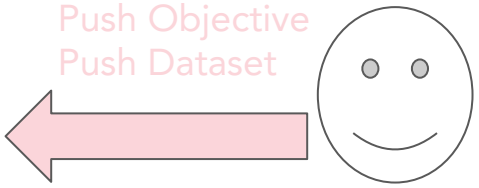
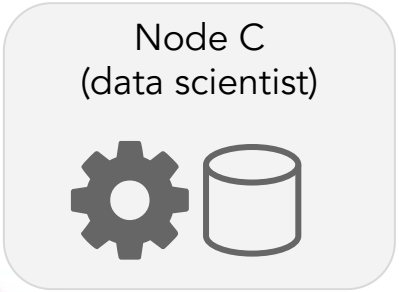
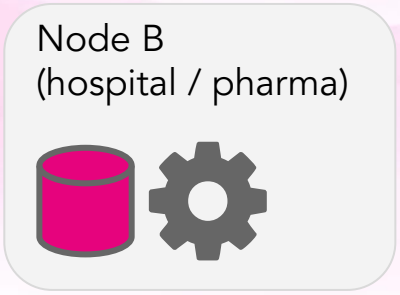
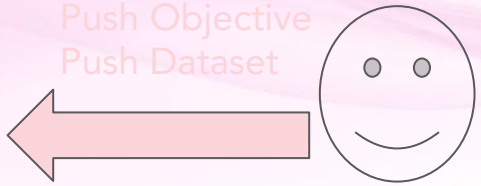
ASSETS











- Objective
  - scientific question
  - evaluation metrics
  - test dataset
- Dataset
  - set of data samples
  - functions to read data samples

Compute Resources

Data Storage

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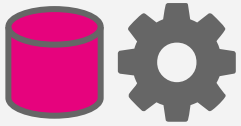
ASSETS

Compute Resources

Data Storage

Node A
(hospital / pharma)

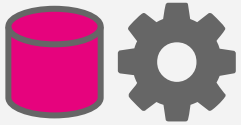


- Algo (training or aggregation)
  - ML algo and its dependencies

Node C
(data scientist)

Push Algo
Push Compute Plan

Node B
(hospital / pharma)



- Compute Plans: set of training, aggregation and evaluation tasks
  - Specification of the chain of tasks
    For each task: input data, input algo, input model/model updates
  - learnt parameters

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ASSETS

Compute Resources

Data Storage

Node A
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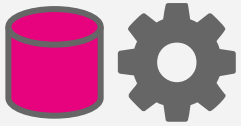

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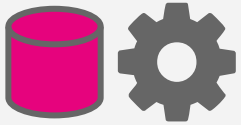

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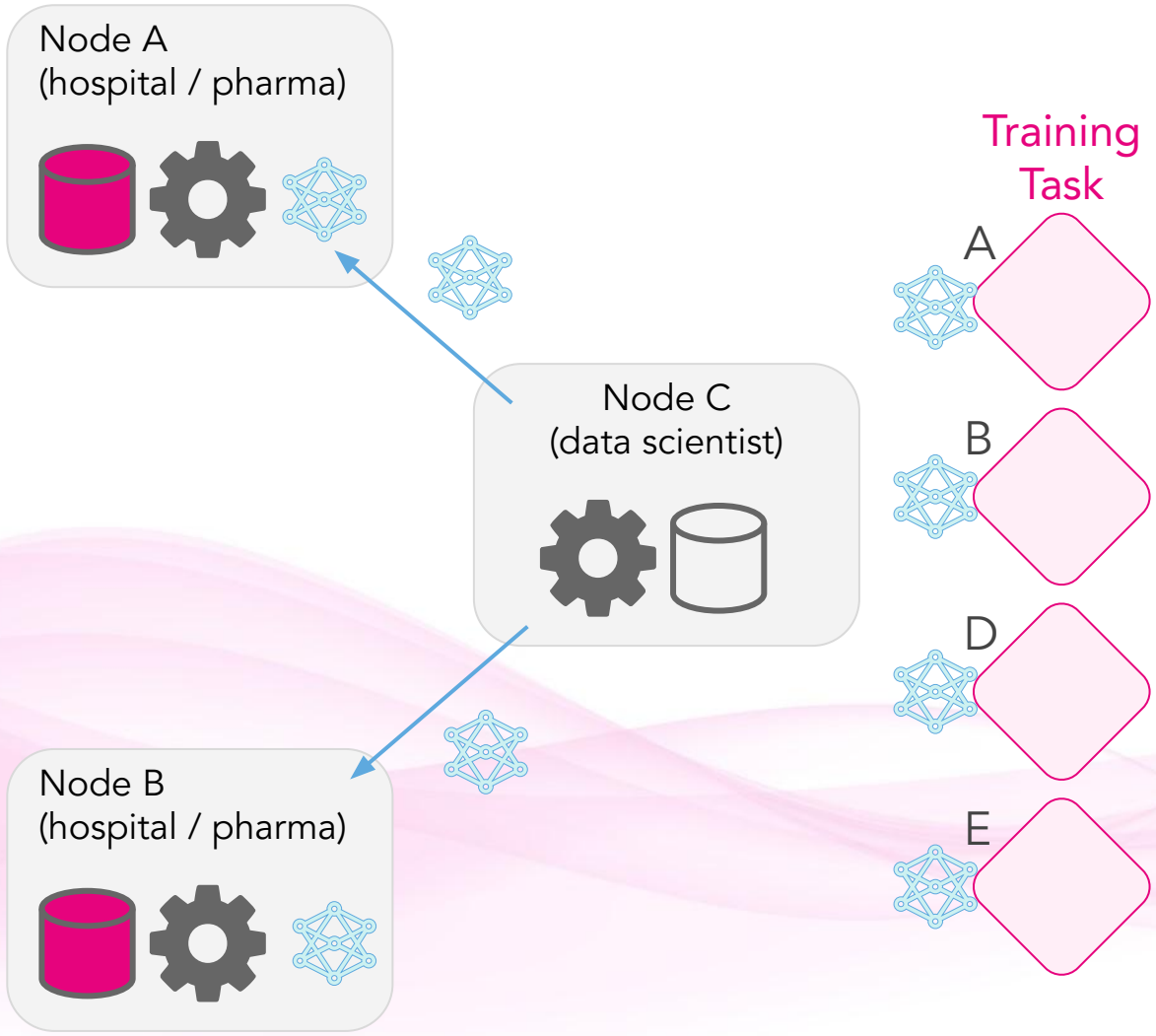
COMPUTE PLAN - Ensembling



Compute Resources

Data
Storage

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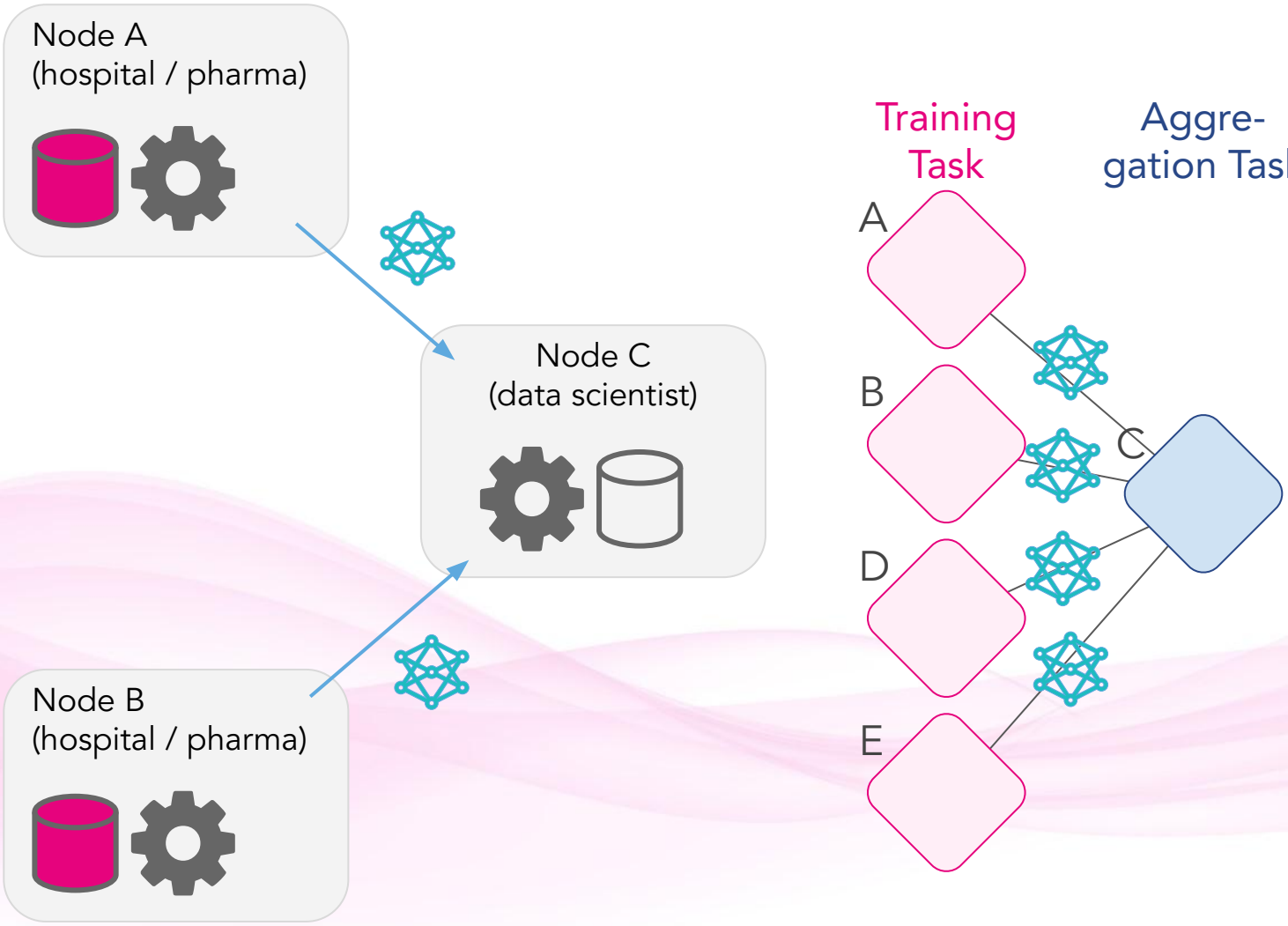
COMPUTE PLAN - Ensembling



Compute Resources

Data Storage

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COMPUTE PLAN - Ensembling

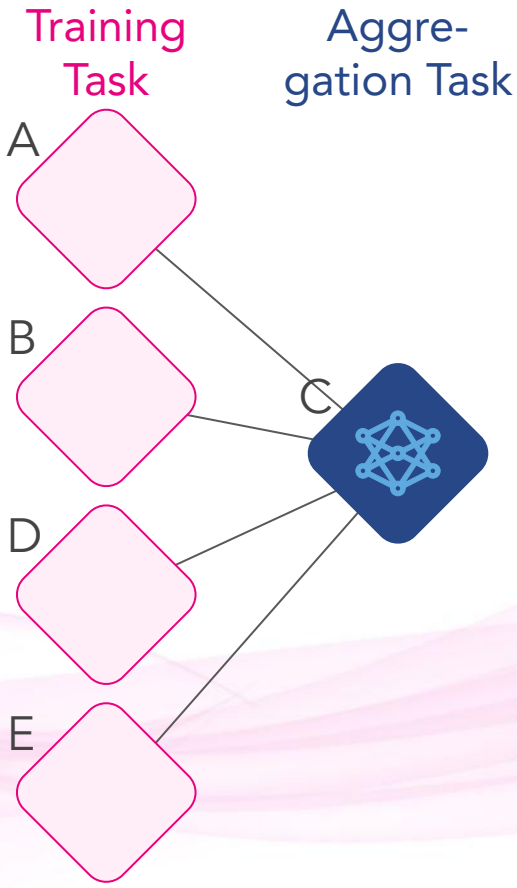
Compute Resources

Data Storage

Node A
(hospital / pharma)

Node C
(data scientist)

Node B
(hospital / pharma)



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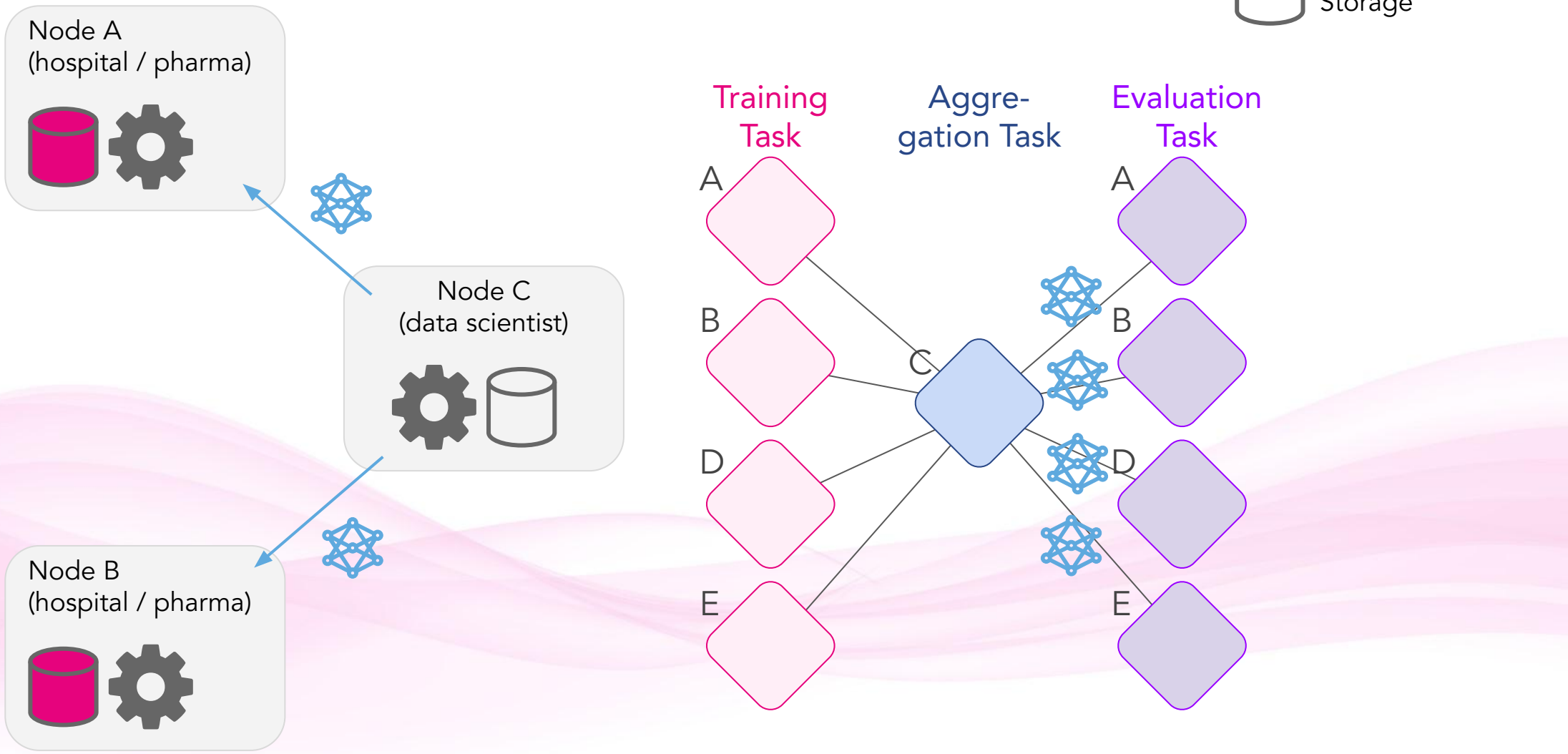

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COMPUTE PLAN - Ensembling

Compute Resources

Data Storage

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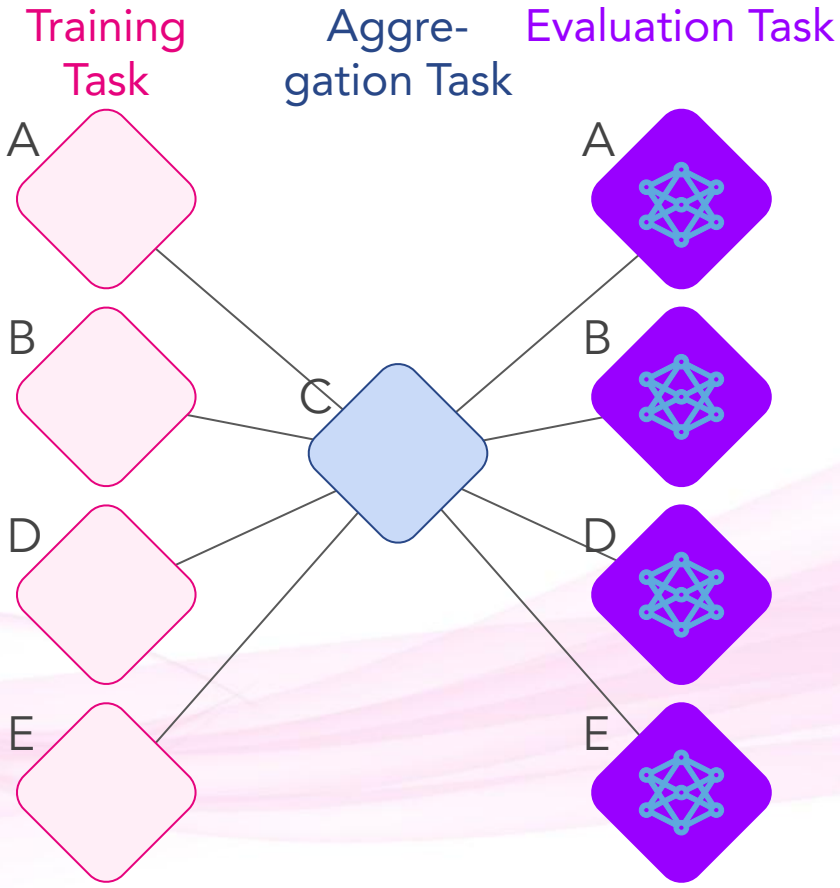

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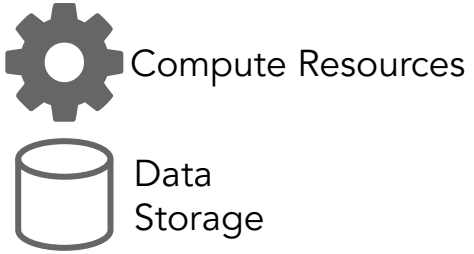
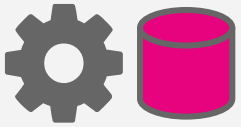
COMPUTE PLAN - Cyclic Learning



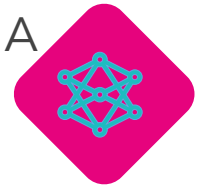
Node A
(hospital / pharma)

Node C
(data scientist)

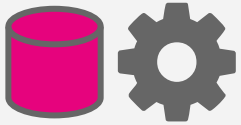


Training
Task

A



Node B
(hospital / pharma)



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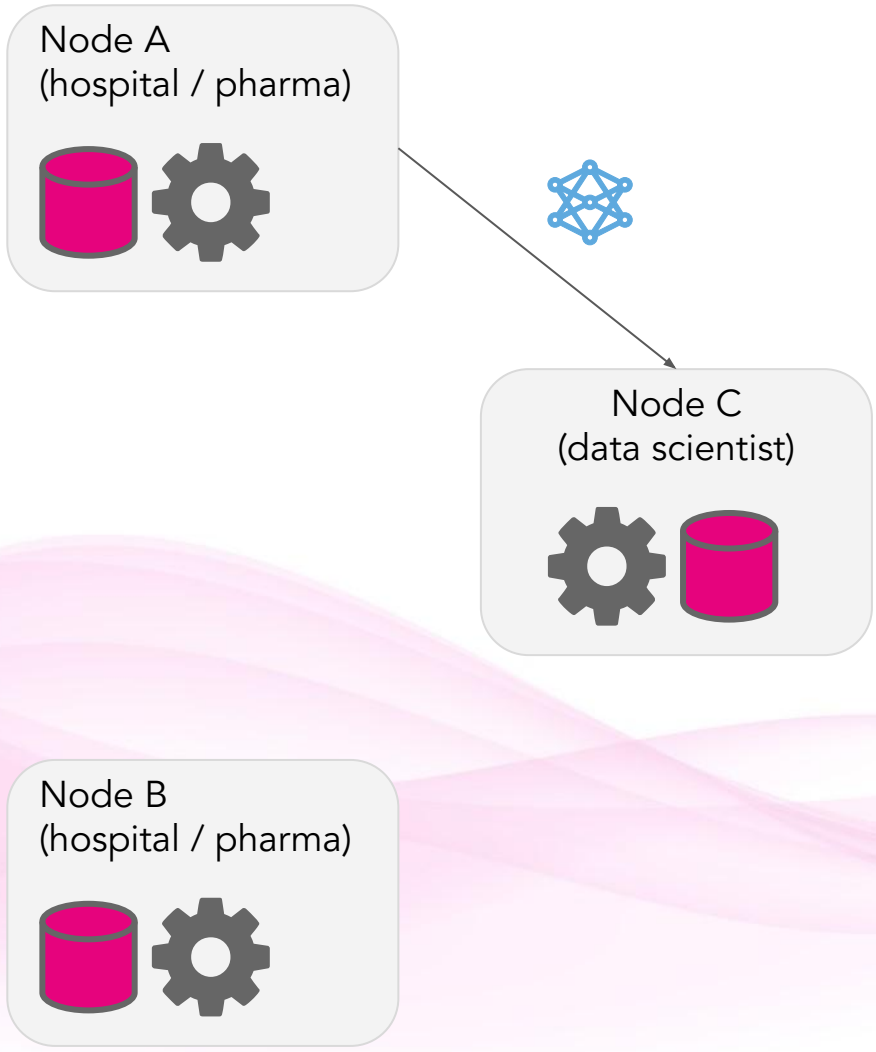
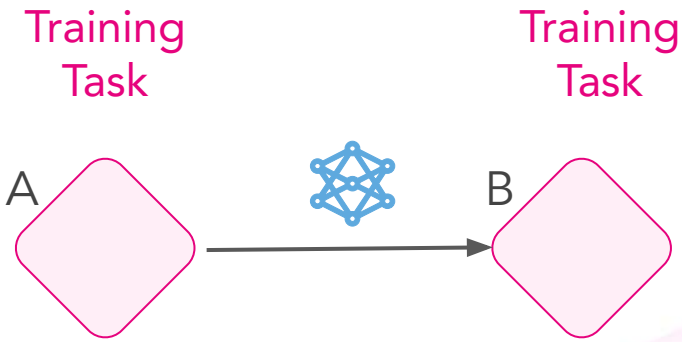
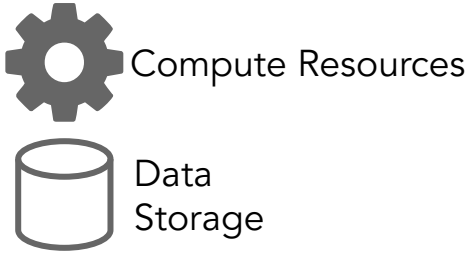
COMPUTE PLAN - Cyclic Learning







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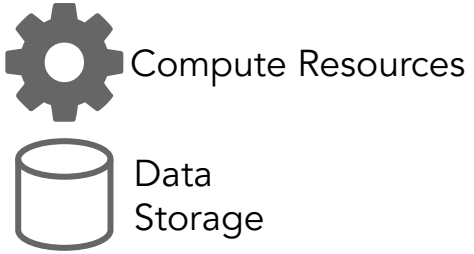
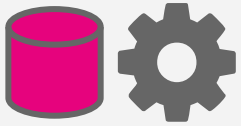
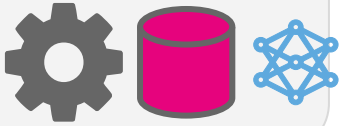


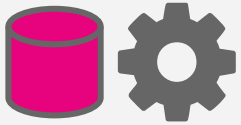
Node A
(hospital / pharma)

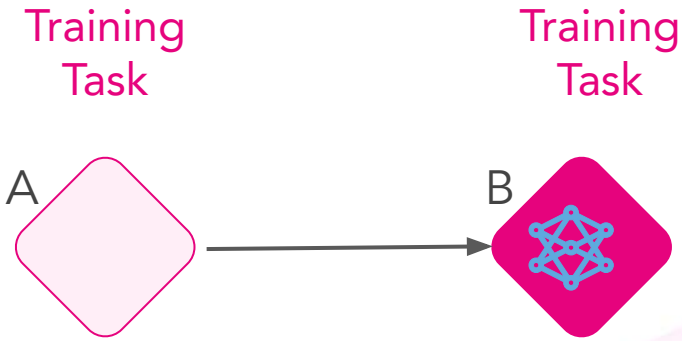


Node C
(data scientist)



Node B
(hospital / pharma)





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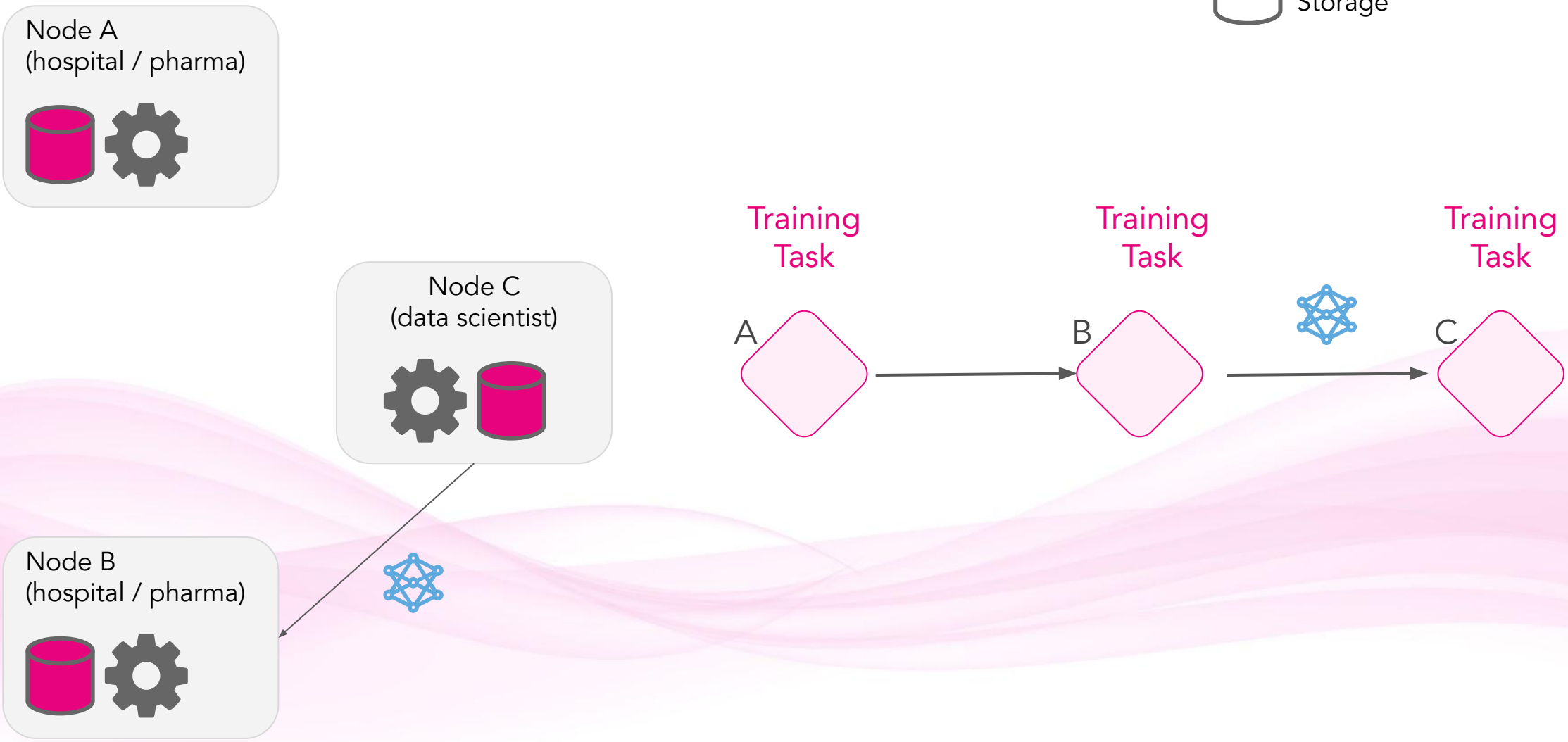

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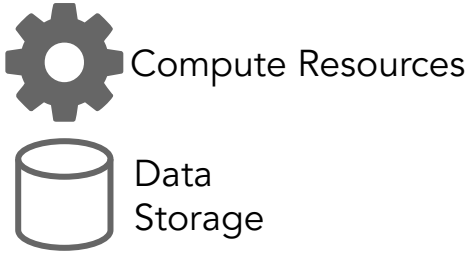

Node A
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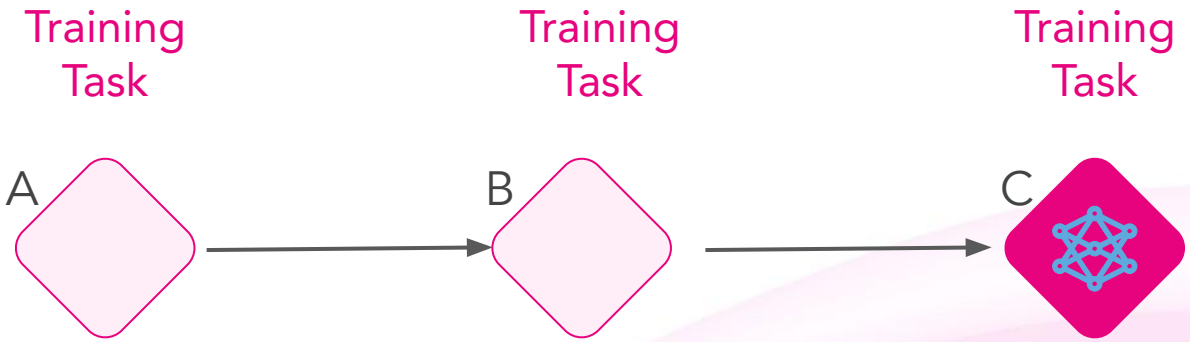

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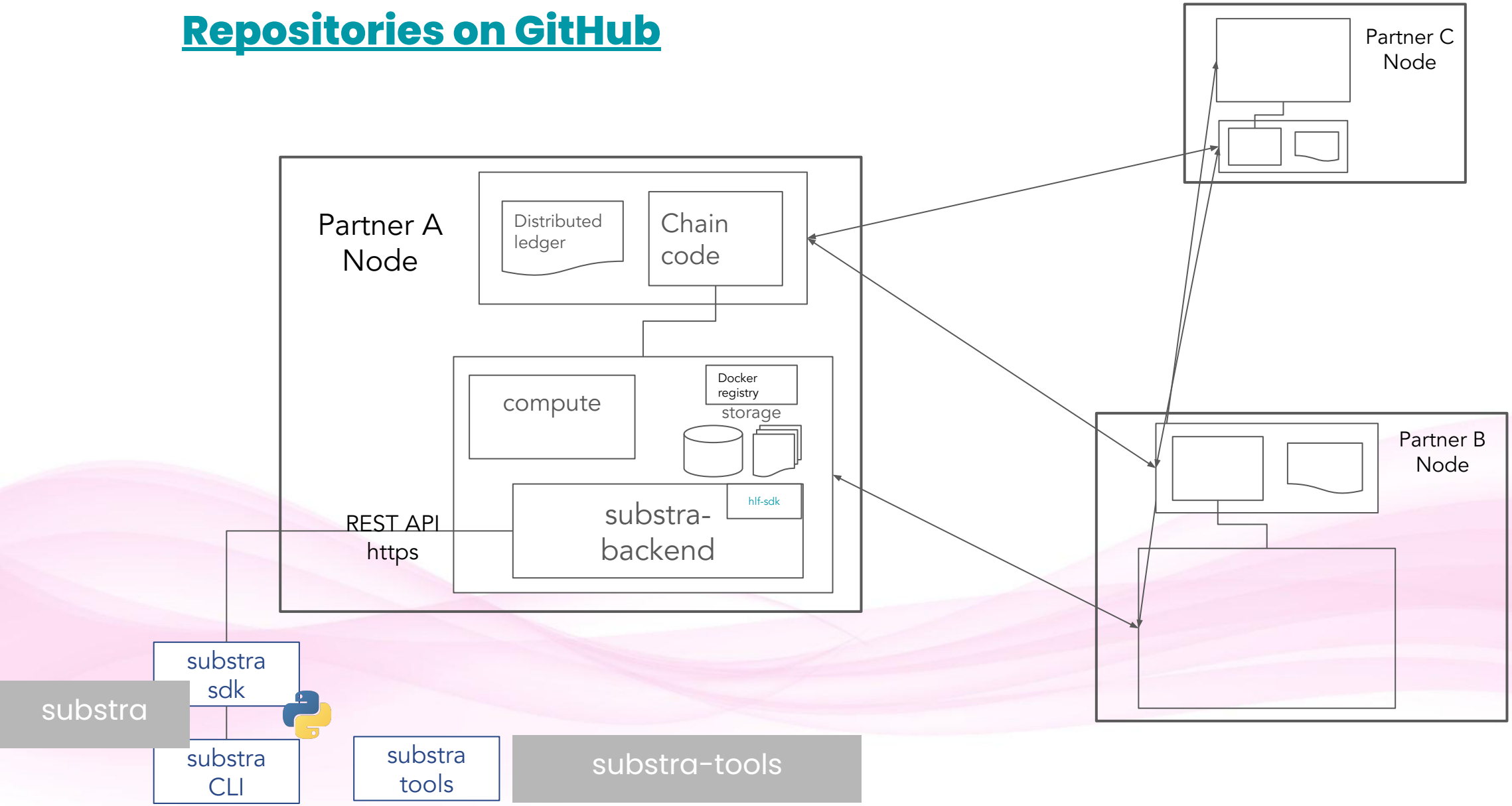
Overview of software architecture

Repositories on GitHub



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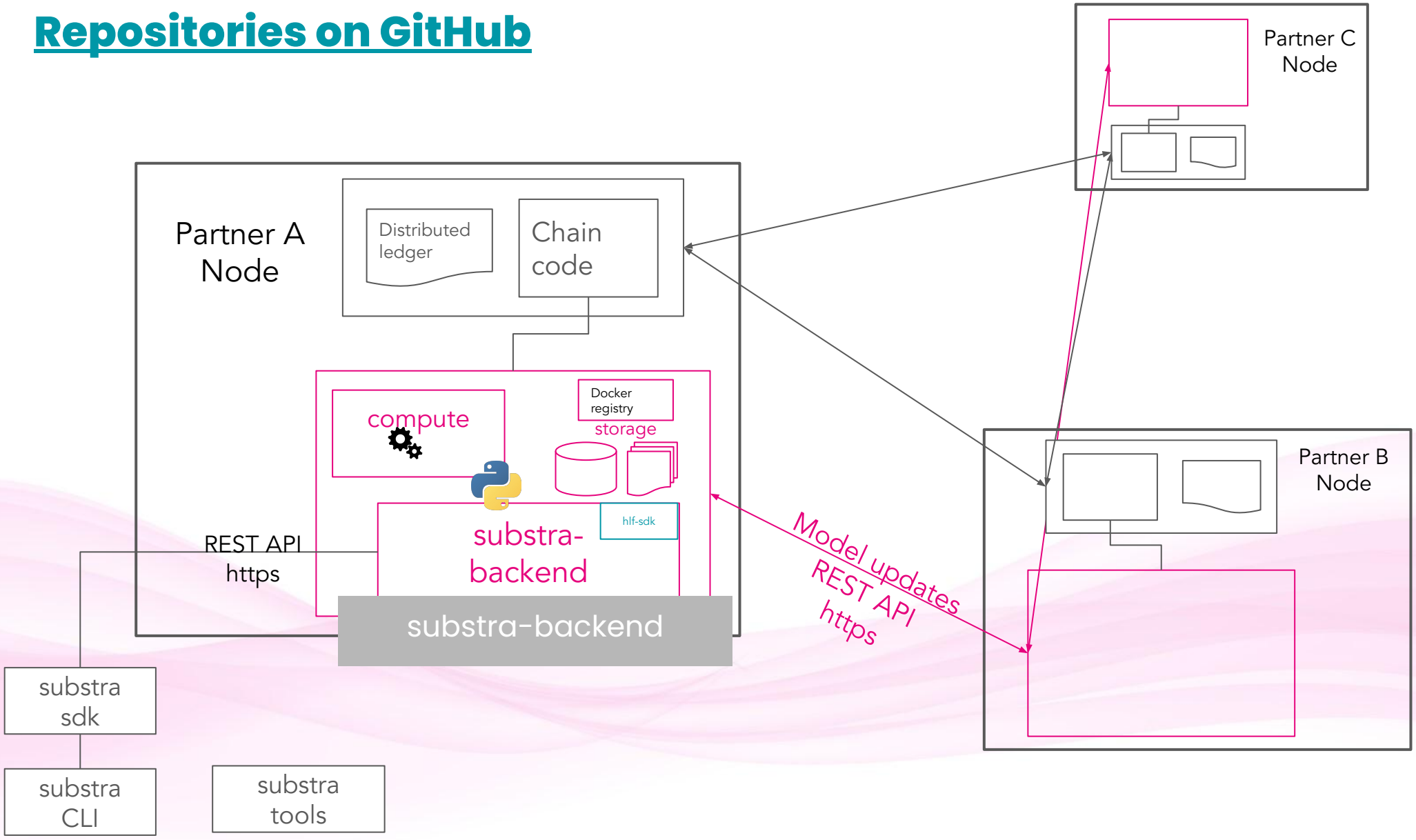
Overview of software architecture

Repositories on GitHub



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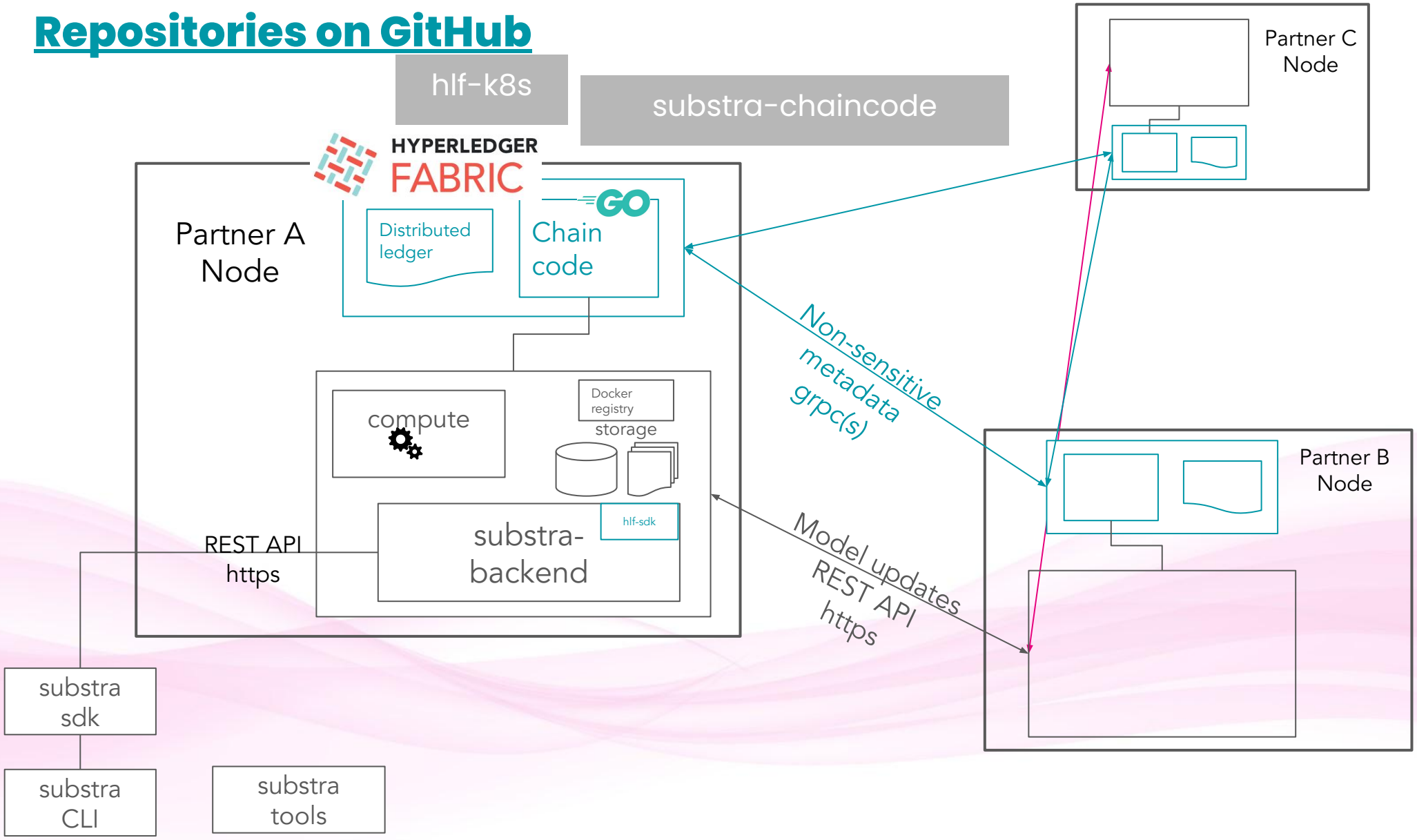
Overview of software architecture

Repositories on GitHub



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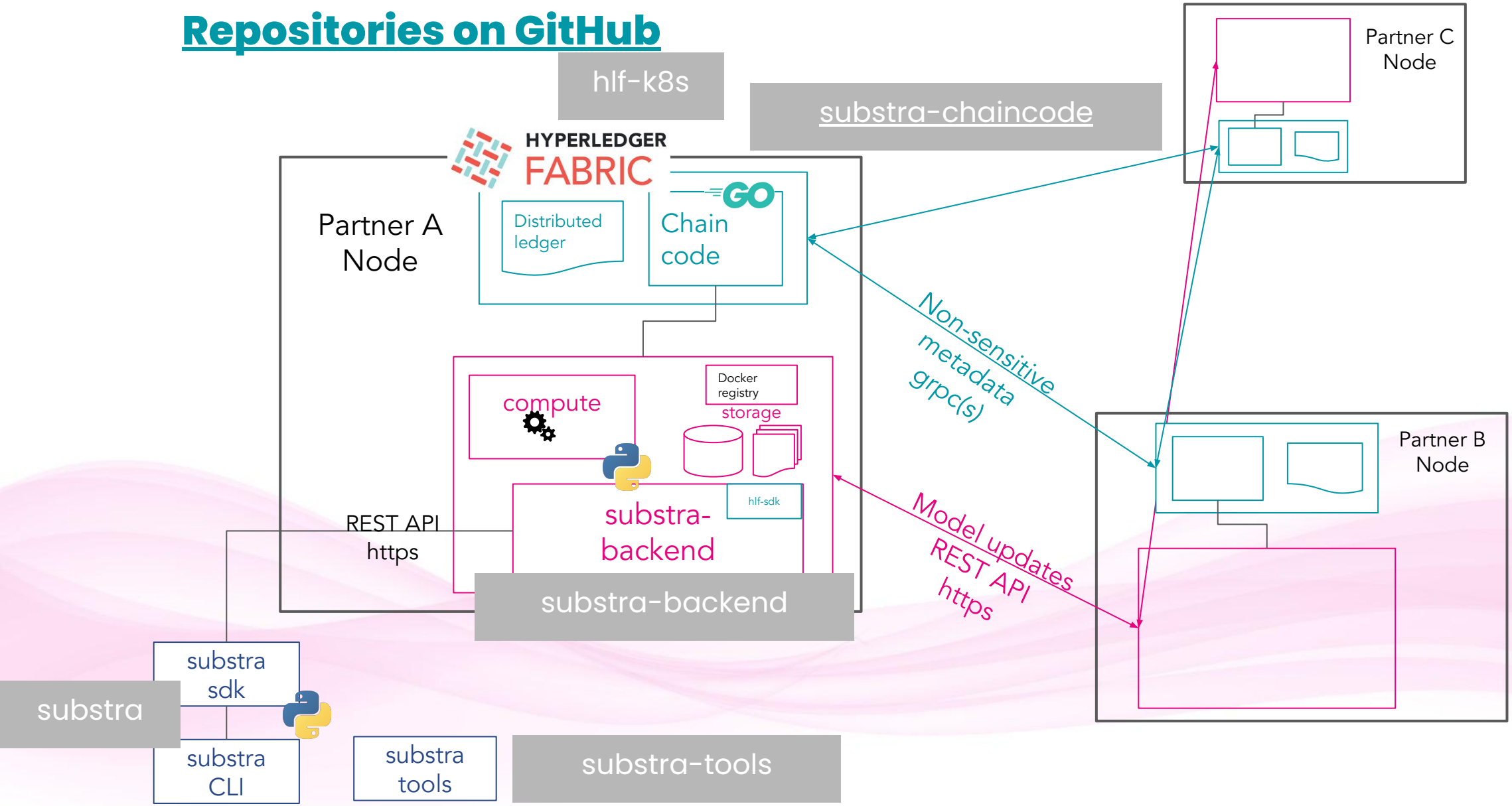
Overview of software architecture

Repositories on GitHub



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Roadmap

Optimisation of computation tasks
Reducing the duration of compute plans

Integration with open source FL library (PySyft)
Makes it possible to leverage PySyft with Substra as an FL orchestrator.

Data Preprocessing Tasks
For now it is possible to do training, aggregation and evaluation tasks on Substra, but no data preprocessing tasks.
Preprocessing tasks take as input a dataset and an algo and outputs another dataset.

More types of Algo
For now: algo, composite algo and aggregate algo.

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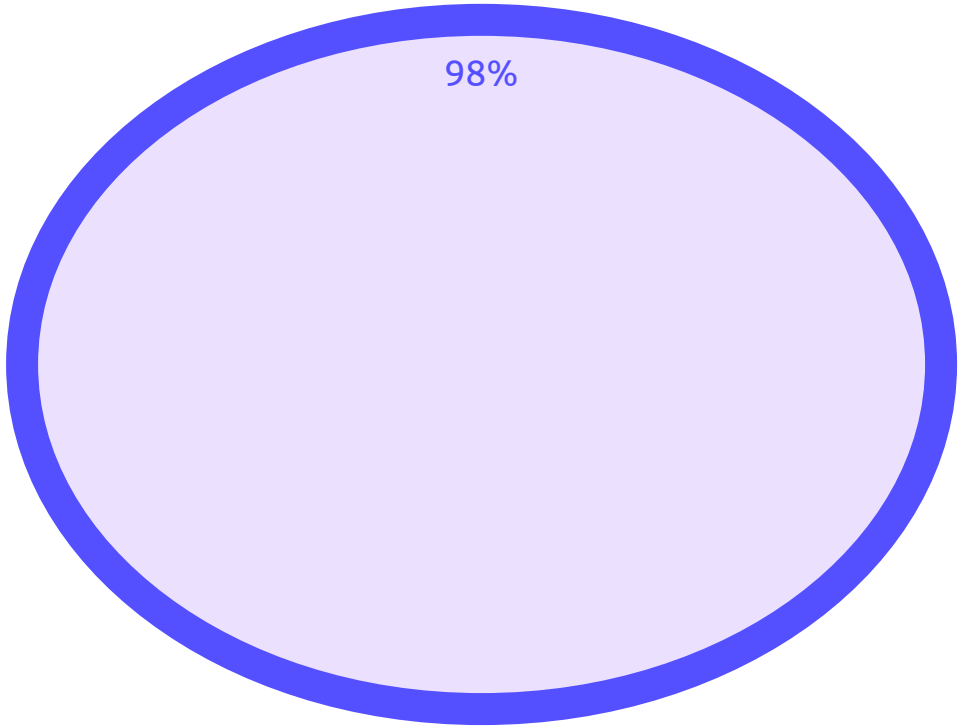
Making and use of the framework

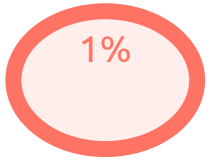
2021Q1 Status update

Who makes the framework today?



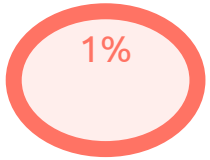
Owkin

- Core design & development
- 10 engineers



Substra Foundation

- Open source doc
- Demo instance



Apricity

- Testing, bug reports
- Demo instance

User perspective: a glimpse at other projects leveraging Substra Framework

HealthChain

- PPFL on healthcare clinical data
- 9 partners, 10m€ funding
- geo. scope: France
- timeline: 2018-2021

MELLODDY

- PPFL on drug discovery data
- 17 partners, 18m€ funding
- geo. scope: EU+
- timeline: 2019-2022

OFA

- PPFL on speech recognition data
- 6 partners - **application stage**
- geo. scope: France
- timeline: 2021-2024

Real use cases

A user perspective

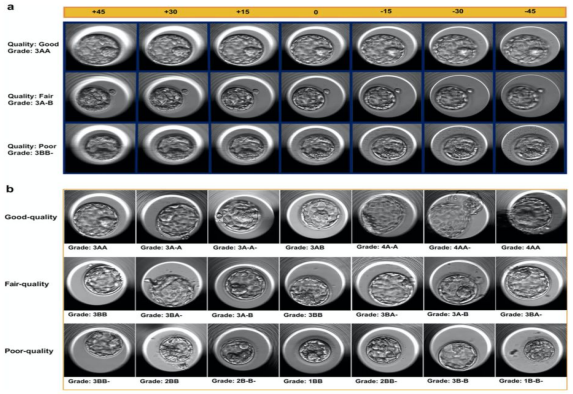
User perspective: leveraging Substra Framework for AI in fertility (1/3)

apricity
fertility reimagined

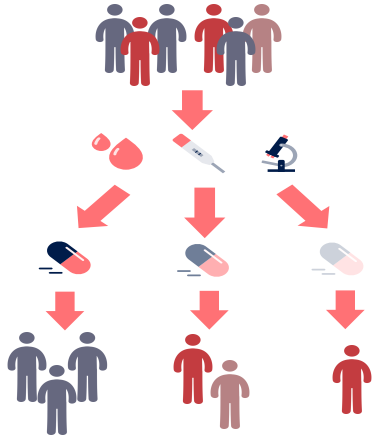
Our goal : leverage artificial intelligence on fertility treatments to increase the treatments rates performance

How ?

1) Embryo selection based on development videos



2) Hormonal treatment optimization based on multisource tabular data



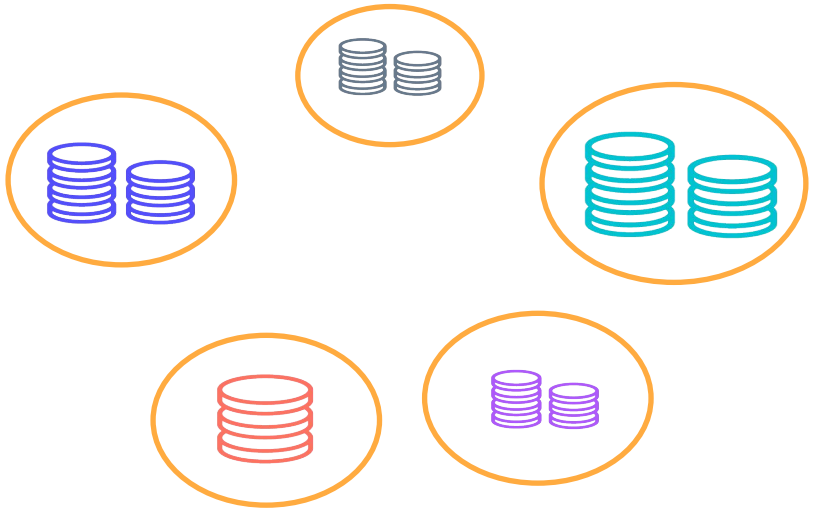
- **30% performance improvement opportunity**
- **Emotion toll reduction**
- **Time to pregnancy improvement**
- **Cost reduction**

User perspective: leveraging Substra Framework for AI in fertility (2/3)

apricity
fertility reimagined

Substra solution meets the fertility field demands to engage into multi-partner data projects

- Data **scattered** among many controllers (hospitals, clinics) at an international level in relatively **small volume**
- Datasets **highly biased** (one fits all treatment per doctor)
- Data **highly sensitive** (infertile patients with risks of reidentification)
- High **security constraints** for studies



User perspective: leveraging Substra Framework for AI in fertility (3/3)

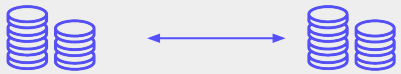
apricity
fertility reimagined

Substra is at the center of our research strategy and partnerships

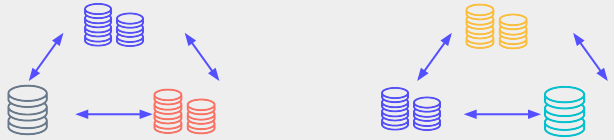
We use Substra framework for research

Healthchain consortium

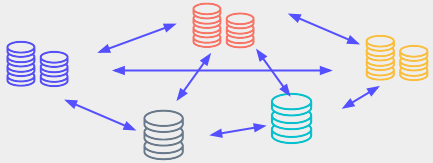
1 hospital + Apricity



Fertility clinics subnetworks for specific project



Fertility hub



We participate to the community

- Multipartner learning contributivity workshops
- Responsible data science workshops

Framework bugs reporting

Beta testing

Why contributing Substra to LF AI & Data?

Joining as an incubation stage hosted project

Contributing Substra Framework to LF AI & Data projects

A step towards mature and established software

1. Strengthen fundamentals to address sensitive data projects:
    - Open governance and transparency
    - Neutral ground and sustainability of the open source code base

    → Fosters trust in the project and its future. Substra will not disappear overnight.

2. LF AI & Data community and reach:
    - More visibility / improve communication → new users / use cases
    - Grow contributor community to consolidate codebase
    - Network and collaborate with other LF AI & Data hosted projects

    → A better environment to grow the project organically.

TAC Vote on Incubation Project Proposal: Substra Framework

Proposed Resolution:

The TAC approves the Substra Framework as an incubation project of the LF AI & Data Foundation

Next Steps

LF AI & Data staff will work with Substra Frameowk to onboard the project leading to the announcement of the project joining LF AI & Data

Explore potential integrations between the incubation project and other LF AI & Data projects

Integrate the incubation project with LF AI & Data operations

LF AI & Data - General Updates

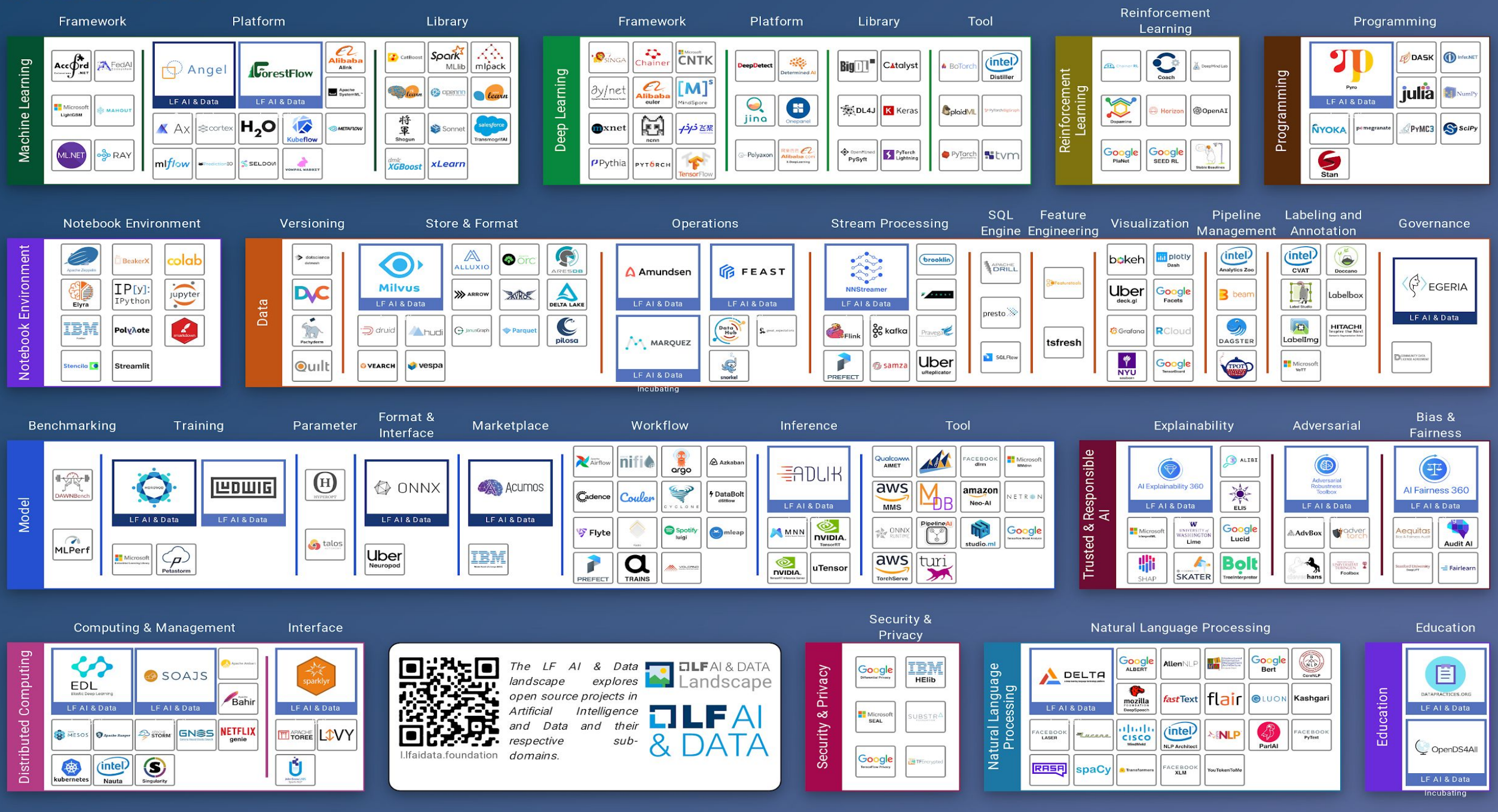
LF AI & DATA

Linux Foundation AI Landscape

2020-11-22T22:28:27Z b08f33f

See the interactive landscape at l.lfai.foundation

Greyed logos are not open source



Framework
Platform
Library
Machine Learning
Angel
LF AI & Data
ForestFlow
LF AI & Data
Framework
Platform
Library
Tool
Deep Learning
Reinforcement Learning
Reinforcement Learning
Programming
Programming
Pyro
LF AI & Data
Notebook Environment
Notebook Environment
Versioning
Store & Format
Operations
Stream Processing
SQL Engine
Feature Engineering
Visualization
Pipeline Management
Labeling and Annotation
Governance
Data
Milvus
LF AI & Data
Amundsen
LF AI & Data
FEAST
LF AI & Data
MARQUEZ
LF AI & Data
Incubating
NNStreamer
LF AI & Data
EGERIA
LF AI & Data
Benchmarking
Training
Parameter
Format & Interface
Marketplace
Workflow
Inference
Tool
Model
LF AI & Data
LF AI & Data
ONNX
LF AI & Data
Acumos
LF AI & Data
ADLIK
LF AI & Data
Explainability
Adversarial
Bias & Fairness
Trusted & Responsible AI
AI Explainability 360
LF AI & Data
Adversarial Robustness Toolbox
LF AI & Data
AI Fairness 360
LF AI & Data
Computing & Management
Interface
Distributed Computing
EDL
LF AI & Data
SOAJS
LF AI & Data
sparklyr
LF AI & Data
The LF AI & Data landscape explores open source projects in Artificial Intelligence and Data and their respective sub-domains.
l.lfaidata.foundation
LF AI & DATA Landscape
LF AI & DATA
Security & Privacy
Security & Privacy
Natural Language Processing
Natural Language Processing
DELTA
LF AI & Data
Education
Education
DATAPRACTICES.ORG
LF AI & Data
OpenDS4All
LF AI & Data
Incubating

Suggested Additions

Project Key

Yellow = not in Landscape, maybe should be added

Programming
Numpy
Numba
SciPy
Dask
Julia (*)
Python
Rstudio

Notebooks
Elyra
I-python
Jupyter Notebooks
PixieDust
Rmarkdown

Security & Privacy
HE-Lib (*)
TensorFlow Privacy
TF-Encrypted

Distributed Computing

Management
OpenShift
Kubernetes
Mesos
Ranger
Storm

Interface
Sparklyr
Toree
Livy
Spark-NLP

Data

Versioning
Pachyderm (*)

Store & Format
Alluxio
Arrow
Avro
Delta Lake (*)
Druid
JanusGraph
Parquet
Ceph

Stream Processing
Flink
Kafka
Logstash (*)
FluentD (*)

Relational DB
Postgres
MySQL
CouchDB

SQL Engine
Presto (*)

Visualization
Bokeh
D3
Plotly
Facets
Grafana
Seaborn
Superset (*)
TensorBoard
Prometheus

Data

Governance
Egeria
CLDA

Feature Engineering
Tsfresh

Operations
FEAST (*)
Amundsen (*)
Hive (*)
Snorkel (*)

Pipeline Management
Beam

Labeling & Annotation
Vott (*)

Exploration
Hue
Kibana

Machine Learning

Framework
LightGBM
Mahout
Ray (*)

Platform
Kubeflow
H2O
SystemML
Mlflow (*)
Seldon (*)
Marvin-AI (*)

Library
Scikit-learn
XGBoost
cat-boost
SparkML

Deep Learning

Framework
TensorFlow
PyTorch
MX-Net

Libarary
Keras

Reinforcement Learning
DeepMind Lab (*)
OpenAI Gym (*)

Model

Inference
TensorRT
TensorRT Inference

Benchmarking
MLPerf

Training
Horovod (*)

Parameter
HyperOpt
Katib

Format & Interface
ONNX

Marketplace
MAX (*)

Workflow
Kubeflow Pipelines
Tekton
Airflow (*)
Nifi (*)
Argp (*)
Mleap (*)
Volcano (*)

Tool
KFServing
ONNX Runtime
TorchServe (*)
Clipper (*)
MMS (*)

Trusted AI

Explainability
AI Explainability 360
Alibi (*)
LIME
SHAP

Bias & Fairness
AI Fairness 360

Adversarial Attacks
Adversarial Robustness Toolbox

Natural Language Processing
UIMA
BERT
Core NLP
Lucene
PyText
Spacy
Transformers (*)

Education
OpenDS4All

LF AI & DATA

2020 TAC Meetings Summary

Months

Jan Feb Mar	16: Milvus (Zilliz)*	*13: MLOps Work (LF CD)* *27: Collective Knowledge (Coral Reef)*	12: NNStreamer (Samsung)* 26: ForestFlow (?)*
Apr May Jun	*9: Trusted AI & ML Workflow (LF)* *23: Open Data Hub (Red Hat)*	7: Ludwig (Uber)* *21: SnapML (IBM)*	*4: Trusted AI (AI for Good, Ambianic.ai, MAIEI)* 18: Fairness, Explainability, Robustness (IBM)*
Jul Aug Sep	*16: Mindspore (Huawei)* 30: Amundsen (Lyft)*	*16: Delta (Didi)* **16: Horovod (Uber/LF)**** *30: ModelDB (?)* *30: Egeria, OpenDS4All, BI&AI (LF ODPi)*	10: SOAJS (HeronTech)* 10: Delta (Didi)* 24: FEAST (Gojek)* **24: Egeria, (LF ODPi)**** 24: OpenDS4All (ODPi)* 24: BI&AI Committee (ODPi)
Oct Nov Dec	*8: Fairness, Explainability, Robustness (LF)* *22: OpenLineage (DataKins)* *22: IDA (IBM/Salesforce)*	5: DataPractices.Org (WorldData/LF)* *5: Kubeflow-On-Prem (Google,Arrikto/Intel)* *19: OpenDS4All, DataPractices.Org, edX Ethical AI (LF)*	3: TBD - JanusGraph (LF)* *3: TBD - RosaeGL (?)* 17: TBD – Seldon Core (Seldon)* **17: TBD – Pyro (Uber/LF)****

(Entity)* = incubating vote

** **bold = graduate vote**

Italics = invited project presentation

2021 TAC Meetings Pipeline Summary

Months			
Jan Feb Mar	14: Data Lifecyle Framework (IBM)* 28: Tentative: Verse (Seldon)	11: MARS (Aliabab) 25: Flyte (Lyft)	11: Streams (IBM) 25: Tentative: Substra Framework
Apr May Jun	8: Adlik (ZTE)** 22: Kubeflow-On-Prem (Google, Arrikto, Intel)	?: Ray (Anyscale.io) ?: Pachyderm (Pachyderm) ?: DataHub (LinkedIn)	?: Common Knowledge (Code Reef) ?: Couler (Ant Financial)
Jul Aug Sep	?: KubeflowServing (Google, Arrikto, Seldon)	?: Kubeflow Pipeline (Google, Bloomberg)	?: Open Data Hub (Red Hat)
Oct Nov Dec	?: Vespa (Verizon Media)	?: Snorkle (Snorkle) ?: Plotly (DASH) ?: Mellody (Substra) ?: mloperator (Polyaxen) ?: SnapML (IBM)	?: PMML/PFA (DMG.org) ?: Mindspore, Volcano (Huawei) ?: TransmorgrifAI (Salesforce) ?: AIMET (Qualcomm) ?: Elyra-AI (IBM)

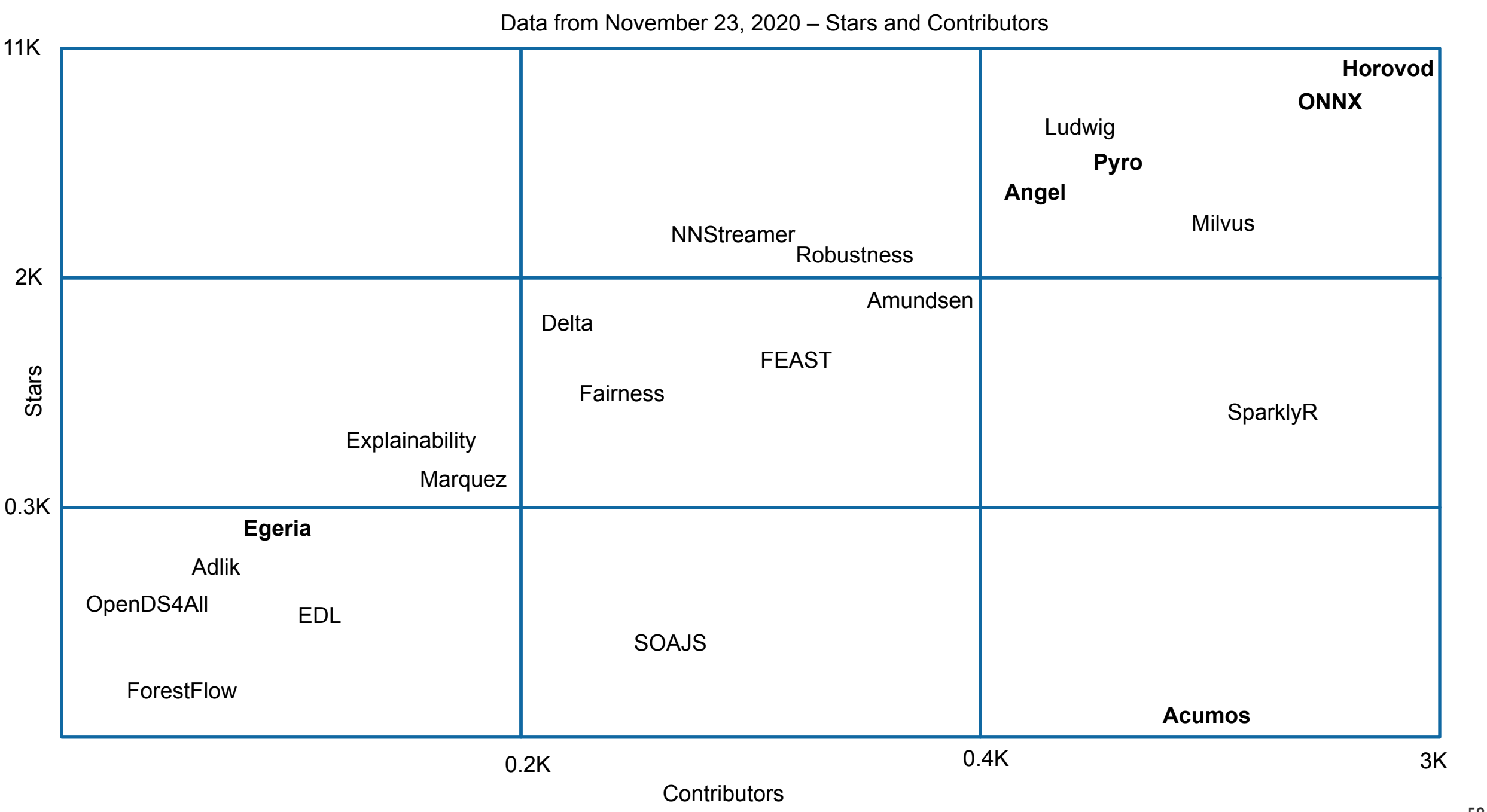
(Entity)* = incubating vote

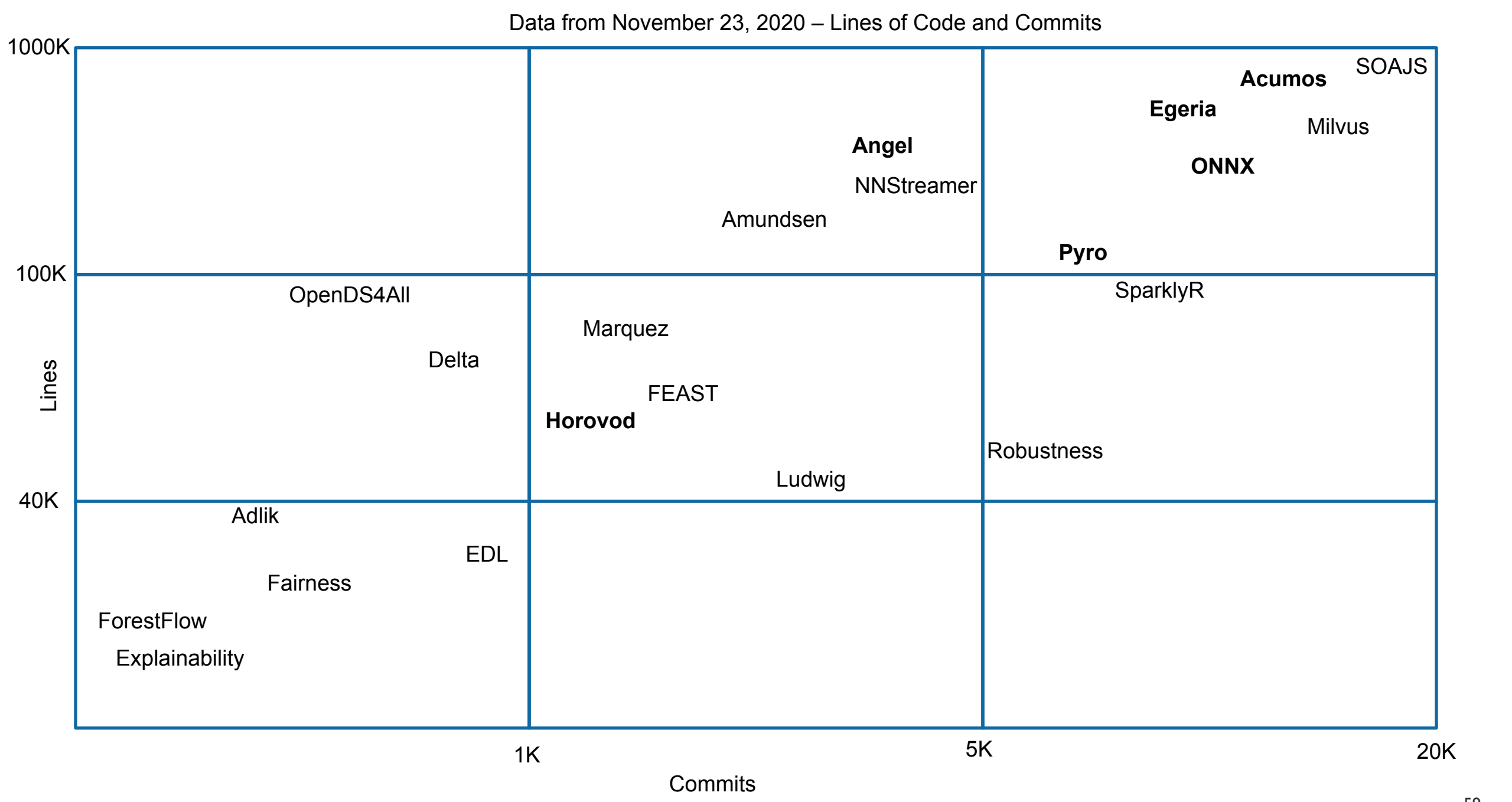
** **bold = graduate vote**

Italics = invited project presentation

Getting to know the projects more

LF AI & DATA


Data from November 23, 2020 – Stars and Contributors
11K
2K
0.3K
Stars
0.2K
0.4K
3K
Contributors
Horovod
ONNX
Ludwig
Pyro
Angel
Milvus
NNStreamer
Robustness
Amundsen
Delta
FEAST
Fairness
SparklyR
Explainability
Marquez
Egeria
Adlik
OpenDS4All
EDL
SOAJS
ForestFlow
Acumos


Data from November 23, 2020 – Lines of Code and Commits
1000K
100K
40K
Lines
SOAJS
Acumos
Egeria
Milvus
Angel
ONNX
NNStreamer
Amundsen
Pyro
SparklyR
OpenDS4All
Marquez
Delta
FEAST
Horovod
Robustness
Ludwig
Adlik
EDL
Fairness
ForestFlow
Explainability
1K
5K
20K
Commits

Looking to host a project with LF AI & Data

- Hosted project stages and life cycle:
  https://lfaidata.foundation/project-stages-and-lifecycle/
- Offered services for hosted projects:
  https://lfaidata.foundation/services-for-projects/
- Contact:
  Jim Spohrer (TAC Chair) and Ibrahim Haddad (ED, LF AI & Data)

Promoting Upcoming Project Releases

We promote project releases via a blog post and on LF AI & Data Twitter and/or LinkedIn social channels

For links to details on upcoming releases for LF AI & Data hosted projects visit the Technical Project Releases wiki

If you are an LF AI & Data hosted project and would like LF AI & Data to promote your release, reach out to pr@lfai.foundation to coordinate in advance (min 2 wks) of your expected release date.

Note on quorum

As LF AI & Data is growing, we now have 16 voting members on the TAC.

TAC representative - please ensure you attend the bi-weekly calls or email Jacqueline/Ibrahim to designate an alternate representative when you can not make it.

We need to ensure quorum on the calls especially when we have items to vote on.

Updates from Outreach Committee

LF AI & DATA

Upcoming Events

- Upcoming Events
  - Visit the LF AI & Data Events Calendar or the LF AI & Data 2021 Events wiki for a list of all events
  - To participate visit the LF AI & Data 2021 Events wiki page or email info@lfaidata.foundation

- Please consider holding virtual events

To discuss participation, please email events@lfaidata.foundation

Upcoming Events

https://lfaidata.foundation/events/

- **March 24, 2021 - ONNX Community Virtual Meetup**
  a. **Wednesday @ 5:00 pm - 8:00 pm PT USA**
     Thursday @ 8:00am - 11am China Time
     LF AI Day: ONNX Community Virtual Meetup – March 2021
     (Virtual - Free - Asia-friendly time – Host Ti Zhou - Baidu)

- **Sept 29 - Oct 1, 2021 - OSS Global**
  a. **Mini-Summit, Booth, Track**

LF AI PR/Comms

- Please follow LF AI & Data on Twitter & LinkedIn and help amplify news via your social networks - Please retweet and share!
  - Also watch for news updates via the tac-general mail list
  - View recent announcement on the LF AI & Data Blog

- Open call to publish project/committee updates or other relevant content on the LF AI & Data Blog

- To discuss more details on participation or upcoming announcements, please email pr@lfaidata.foundation

Call to Participate in Ongoing Efforts

LF AI & DATA

Trusted AI

- **Leadership:**
  Animesh Singh (IBM), Souad Ouali (Orange), and Jeff Cao (Tencent)
- **Goal:** Create policies, guidelines, tooling and use cases by industry

- **Slack conversation channel:**
  #trusted-ai-committee
  https://lfaifoundation.slack.com/archives/CPS6Q1E8G
- **Github:**
  https://github.com/lfai/trusted-ai
- **Wiki:**
  https://wiki.lfai.foundation/display/DL/Trusted+AI+Committee
- **Email lists:**
  https://lists.lfaidata.foundation/g/trustedai-committee/
- **Next call:** Monthly alternating times
  https://wiki.lfai.foundation/pages/viewpage.action?pageId=12091895

ML Workflow & Interop

- **Leadership:**
  Huang “Howard” Zhipeng (Huawei)
- **Goal:**
  Define an ML Workflow and promote cross project integration

- **Slack conversation channel:**
  #ml-workflow
  https://lfaifoundation.slack.com/archives/C011V9VSMQR
- **Wiki:**
  https://wiki.lfaidata.foundation/pages/viewpage.action?pageId=10518537
- **Email lists:**
  https://lists.lfaidata.foundation/g/mlworkflow-committee
- **Next call:** Monthly check calendar/slack
  https://wiki.lfai.foundation/pages/viewpage.action?pageId=18481242

BI & AI

- **Leadership:**
  Cupid Chan (Index Analytics)
- **Goal:** Identify and share industry best practices that combine the speed of machine learning with human insights to create a new business intelligence and better strategic direction for your organization.

- **Slack conversations channel:**
  #bi-ai-committee
  https://lfaifoundation.slack.com/archives/C01EK5ND073
- **Github:**
  https://github.com/odpi/bi-ai
  Wiki:
  https://wiki.lfaidata.foundation/pages/viewpage.action?pageId=35160417
  Email lists:
  https://lists.lfaidata.foundation/g/biai-discussion
  Next call: Monthly community call TBD

Ongoing effort to create AI Ethics Training

Initial developed course by the LF: Ethics in AI and Big Data - published on edX platform: https://www.edx.org/course/ethics-in-ai-and-big-data

The goal is to build 2 more modules and package all 3 as a professional certificate - a requirement for edX

- **To participate: https://lists.lfaidata.foundation/g/aiethics-training**

Upcoming TAC Meetings

LF AI & DATA

Upcoming TAC Meetings (Tentative)

›

› Mar 11: Sandbox project proposal - RosaeNLG

› Mar 25: Substra Foundation

› April 8: Adlik (ZTE)

› April 22: TBD

› May 6: All project updates

›

Please send agenda topic requests to
tac-general@lists.lfaidata.foundation

TAC Meeting Details

- To subscribe to the TAC Group Calendar, visit the wiki: https://wiki.lfaidata.foundation/x/cQB2
- Join from PC, Mac, Linux, iOS or Android: https://zoom.us/j/430697670
- Or iPhone one-tap:
  - US: +16465588656,,430697670# or +16699006833,,430697670#
- Or Telephone:
  - Dial(for higher quality, dial a number based on your current location):
  - US: +1 646 558 8656 or +1 669 900 6833 or +1 855 880 1246 (Toll Free) or +1 877 369 0926 (Toll Free)
- Meeting ID: 430 697 670
- International numbers available: https://zoom.us/u/achYtcw7uN

Open Discussion

LF AI & DATA

Mission

To build and support an open community and a growing ecosystem of open source AI, data and analytics projects, by accelerating innovation, enabling collaboration and the creation of new opportunities for all the members of the community

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- Please email legal@linuxfoundation.org with any questions about The Linux Foundation's policies or the notices set forth on this slide.

LF AI & DATA

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