

Meeting of the Technical Advisory Council (TAC)

February 11, 2021

 **DLF** AI & DATA

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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 (2 mins) - welcome Pyro!
- › Approval of Minutes (2 mins)
- › Invited Presentation (40 minutes)
 - › Egeria CI - Build and Release (Nigel Jones (Egeria, IBM))
- › Invited Presentation (15 minutes)
 - › Mentorships (John Mertic (LF))
- › LF AI General Updates (2 minutes)
- › Open Discussion (2 minutes)

TAC Voting Members

* = still need backup specified on [wiki](#)

Board Member	Contact Person	Email
AT&T	Anwar Atfab	anwar@research.att.com
Baidu	Ti Zhou	zhouti@baidu.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 January 28th, 2021 Minutes

Draft minutes from the January 28th TAC call were previously distributed to the TAC members via the mailing list

Proposed Resolution:

- › That the minutes of the January 28th meeting of the Technical Advisory Council of the LF AI & Data Foundation are hereby approved.

Invited Presentation - Egeria CI - Build and Release

Nigel Jones (Egeria Project, IBM)

Egeria – Build & Release

Nigel Jones – Egeria Maintainer (<https://github.com/planetf1>) – IBM
2021-02-11

Egeria – codebase @ <https://github.com/odni/egeria>



Egeria Repositories

egeria

egeria-react-ui

egeria-ui

egeria-api-mocks

egeria-samples

egeria-k8s-operator

egeria-dev-projects

egeria-connector-cruX

egeria-connector-Hadoop-ecosystem

egeria-connector-ibm-information-server

egeria-database-connectors

egeria-connector-sas-viya

egeria-palisade

data-governance

.....

CI/CD Progression

Jenkins

- Dedicated LF managed
- Sonar
- Nexus IQ
- Complex for dev team to modify



Azure Pipelines

- More flexible – dev team can extend
- Docker images (still in use)
- more repos
- Supporting monthly releases
- Sonar (still in use)
- Nexus IQ (still in use)



Github Actions

- Rapid additions ie to PR Tests
- Dependabot
- Artifacts
- Added UI & connector builds
- Very developer friendly & visible
- Examples, Community, ecosystem
- Faster

Development pipelines

PR

- maven (Java 8) & gradle (Java 8, Java 11) on Ubuntu
- Unit tests & FVTs
- CodeQL code scanning – security issue detection
- Publish as artifact file
- DCO

Merge

- Docker images
- Publish maven snapshots
- Windows (slow....)
- Additional scanning – NexusIQ, Sonar

Scheduled

- Check doc links
- Monthly Dependabot scan for dependency updates (security/currency)

Release (as of Feb 2021)



February Challenge

<https://jfrog.com/blog/into-the-sunset-bintray-jcenter-go-center-and-chartcenter/>

Azure Pipelines



GitHub Actions

In-progress & potential areas

Repositories

- Consistency
- Contract – consumer/provider
- Versioning
- Aggregation/assembly
- Samples
- Demos
- Connectors
- Security

Build

- Gradle
 - 2-3x clean
 - 100x incremental
 - Removes some maven limitations
- BOMs for consumers
- More PR checks
- Docker images for PR?
- Merge build to GitHub actions

Test

- Notebooks
- CTS
- More UT/FVT
- K8s tests
- Cross-version tests
- Improve coverage
- Dynamic security testing
- Performance & scalability?

Release

- Move to GitHub actions
- Automation
- Release notes – improve
- Reports
 - Javadoc
 - Coverage
 - ...
- Publishing helm charts / k8s operator
- Publish npm for UI

To think about

Will we hit free limitations on GitHub actions?

Will we hit free limitations on DockerHub?

As we develop some longer running/larger tests we may need access to a hosted k8s environment. £\$£\$

Sharing best practice

Invited Presentation - Mentorships

John Mertic (Linux Foundation)

Invited Presentation -
TBD - will do at a future time

Steven Winslow (Linux Foundation)

Why mentorships?

- For students, it helps them learn real-world software development skills and time management
- For projects, it brings in new contributors that become maintainers with codebase experience.
- For members, it highlights up and coming talent to hire.

We generally see LF projects leverage these platforms

 **OLFX** | Mentorship

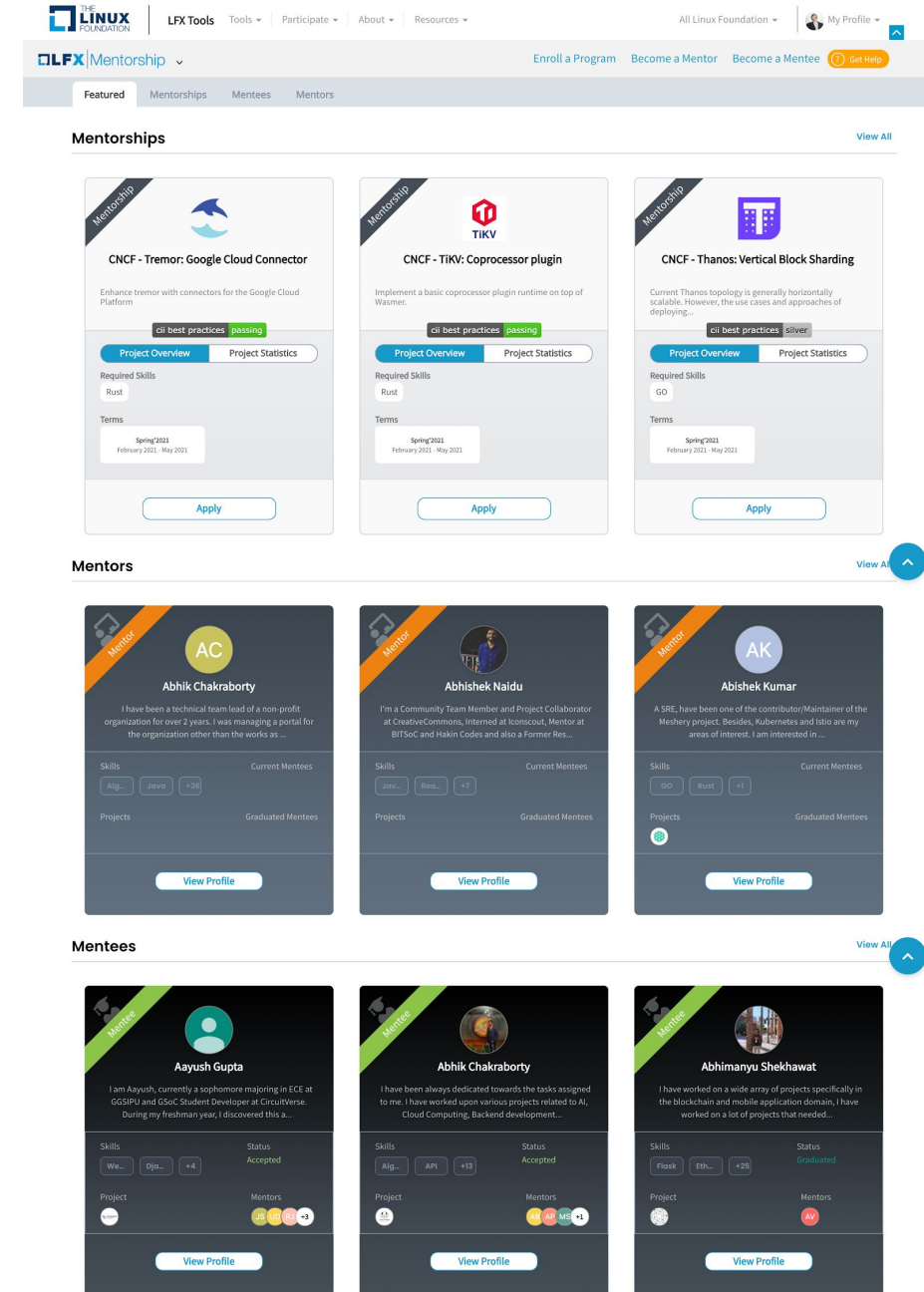
 Google Summer of Code

What is LFX Mentorships?

Part of the LFX platform, it provides tooling for attracting mentees and supporting mentorships.

Project providing the mentorship provides funding, but there is the opportunity to crowdfund to support mentorships.

Three mentorship terms, spring, summer, and fall, gives the project flexibility on timelines



Google Summer of Code

Summer program sponsored by Google for the past 16 years.

Open source organizations can apply to be a mentoring organization, and Google approves and sets a number of mentorships for each organization.

No cost to project, and provides a small stipend (\$400 USD) per mentorship.

Deadline to apply is February 19, 2021

16,000+ STUDENTS, 111 COUNTRIES
16 YEARS, 715 OPEN SOURCE ORGANIZATIONS

38,000,000+ LINES OF CODE

Google Summer of Code is a global program focused on bringing more student developers into open source software development. Students work with an open source organization on a 10 week programming project during their break from school.

[GET STARTED](#)

Organizations
Apply

Deadline February 19, 2021 at 14:00

Open source organizations that would like to participate as a mentor organization this year can apply.

What to do if LF AI and Data wants to do this

1. Form a working group to manage mentorships
2. Get going on the platform
 - › Apply to GSoC as an organization (if this path is of interest)
 - › Add projects to LFX Mentorship that want to do mentorships (if this path is of interest).
3. Start a project ideas page where projects can list mentorship project ideas or link to issue list of mentorship ideas
 - › Example:
<https://github.com/cncf/mentoring/blob/master/summerofcode/2020.md>
4. Be ready for inbound interest!
5. Select final mentorships and mentees

LF AI & Data - General Updates

Machine Learning	Framework	Platform	Library	Framework	Platform	Library	Tool	Reinforcement Learning	Programming

Notebook Environment	Versioning	Store & Format	Operations	Stream Processing	SQL Engine	Feature Engineering	Visualization	Pipeline Management	Labeling and Annotation	Governance




Model	Benchmarking	Training	Parameter	Format & Interface	Marketplace	Workflow	Inference	Tool	Explainability	Adversarial	Bias & Fairness







Distributed Computing	Computing & Management	Interface	Security & Privacy	Natural Language Processing	Education









The LF AI & Data landscape explores open source projects in Artificial Intelligence and Data and their respective domains.

l.fai.foundation

LF AI & DATA Landscape

Machine Learning	Framework	Platform	Library	Framework	Platform	Library	Tool	Reinforcement Learning	Programming
		 Angel LF AI & Data	 ForestFlow LF AI & Data						 PyTorch LF AI & Data

Notebook Environment	Notebook Environment	Versioning	Store & Format	Operations	Stream Processing	SQL Engine	Feature Engineering	Visualization	Pipeline Management	Labeling and Annotation	Governance
			 Milvus LF AI & Data	 Amundsen LF AI & Data  FEAST LF AI & Data  MARQUEZ LF AI & Data Incubating	 NNStramer LF AI & Data						 EGERIA LF AI & Data

Model	Benchmarking	Training	Parameter	Format & Interface	Marketplace	Workflow	Inference	Tool	Explainability	Adversarial	Bias & Fairness
		 H2O LF AI & Data	 LUDWIG LF AI & Data	 ONNX LF AI & Data	 Acumos LF AI & Data		 ADLIX LF AI & Data		 AI Explainability 360 LF AI & Data	 Adversarial Robustness Toolbox LF AI & Data	 AI Fairness 360 LF AI & Data

Distributed Computing	Computing & Management	Interface	 <p>The LF AI & Data landscape explores open source projects in Artificial Intelligence and Data and their respective sub-</p> 				Security & Privacy	Natural Language Processing	Education
	 EDL LF AI & Data	 SOAJS LF AI & Data	 sparklyr LF AI & Data					 DELTA LF AI & Data	 DATAFACTICES.ORG LF AI & Data  OpenDS4AI 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

[Flyra](#)
[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](#)

Library
[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](#)

2020 TAC Meetings Summary

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

Jan Feb Mar	14: Data Lifecycle 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)

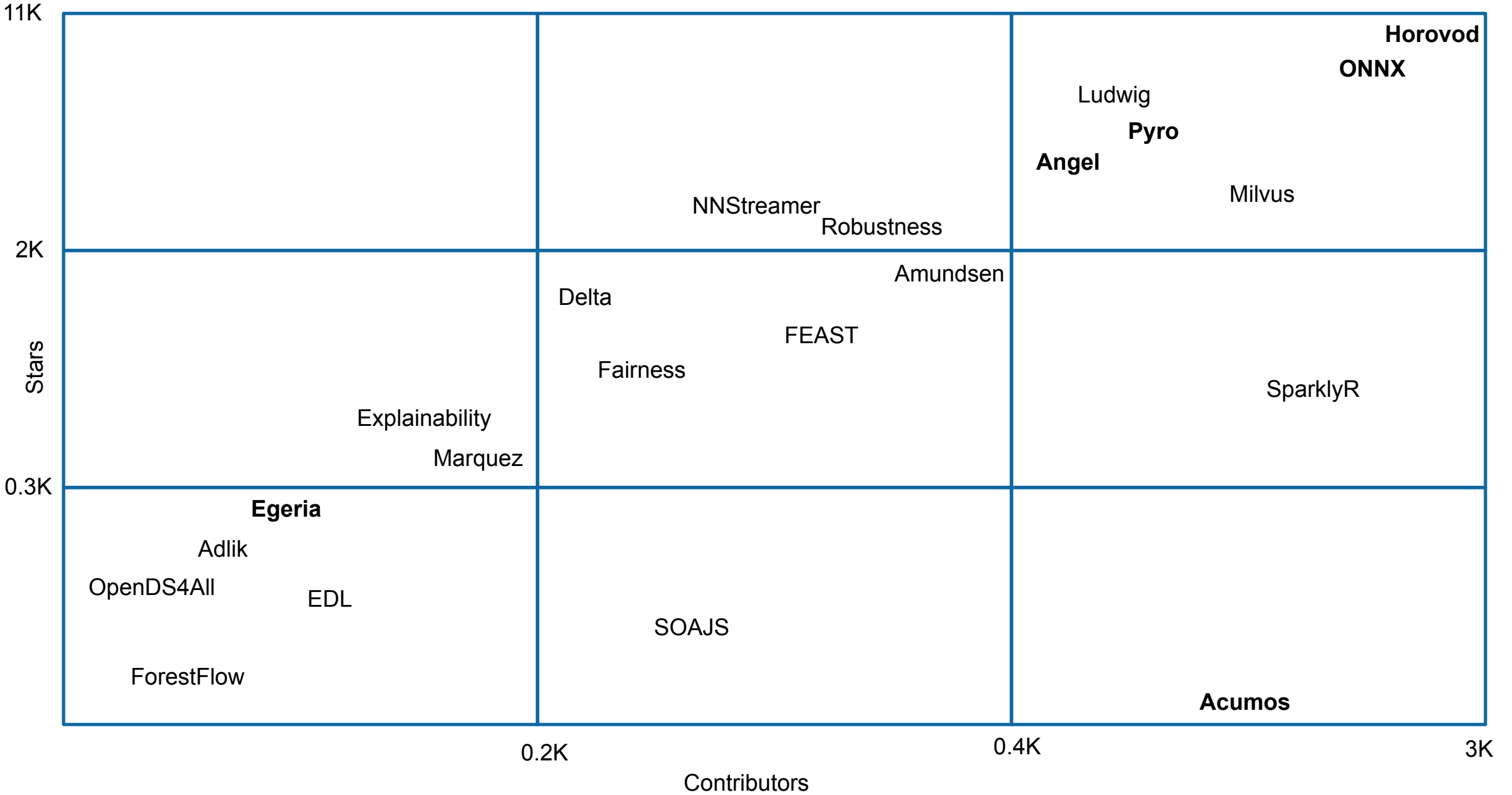
(Entity)* = incubating vote

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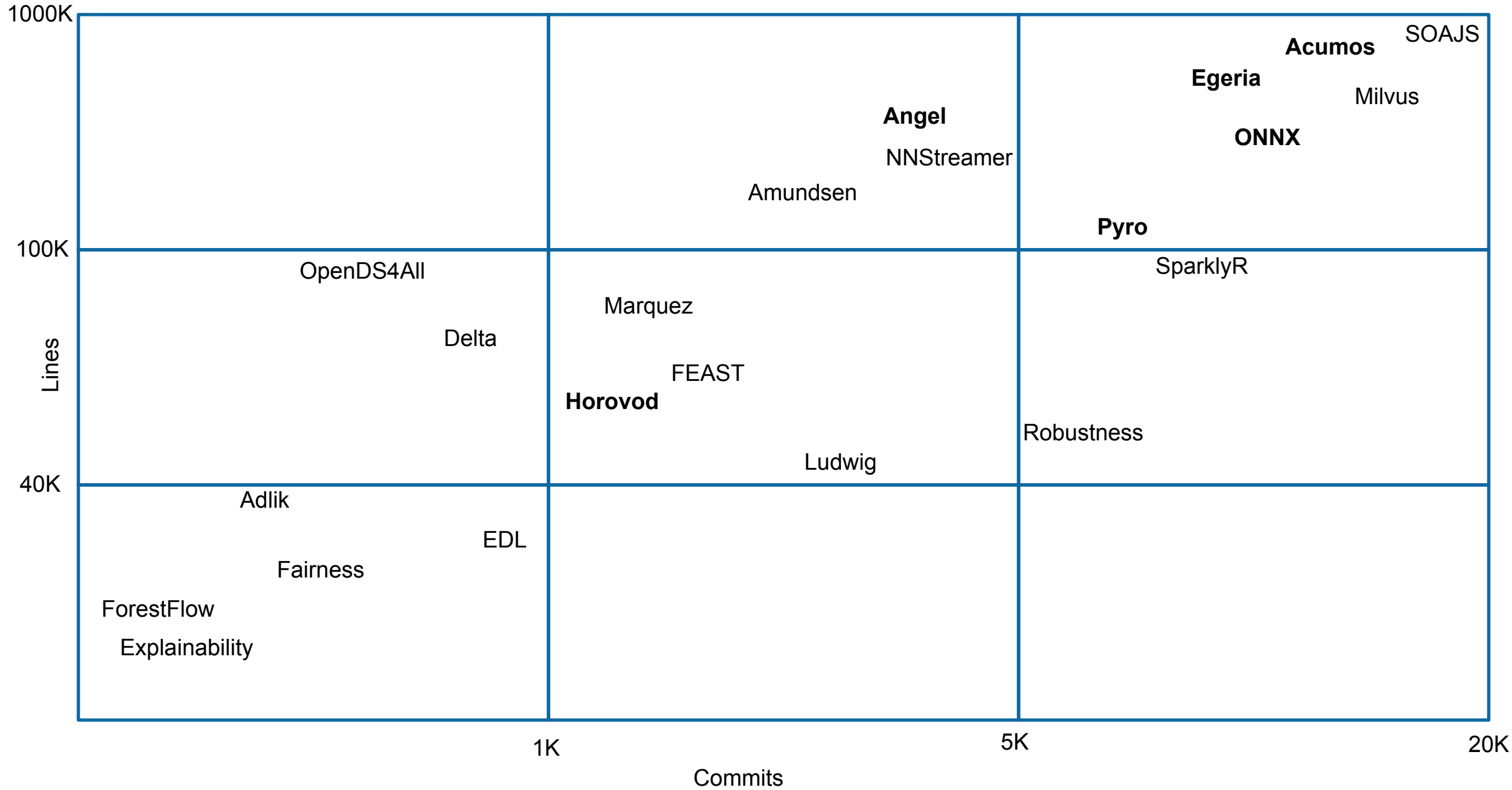
Italics = invited project presentation

Getting to know the projects more

Data from November 23, 2020 – Stars and Contributors



Data from November 23, 2020 – Lines of Code and 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

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

 OLF 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

Upcoming TAC Meetings (Tentative)

- ›
- › Feb 25: FLYTE (Lyft)
- › Mar 11: TBD
- › 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

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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