

# Meeting of the LF AI & Data Technical Advisory Council (TAC)

September 9, 2021

 LF AI & DATA

# Antitrust 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.
- › Examples of types of actions that are prohibited at Linux Foundation meetings and in connection with Linux Foundation activities are described in the Linux Foundation Antitrust Policy available at <http://www.linuxfoundation.org/antitrust-policy>. If you have questions about these matters, please contact your company counsel, or if you are a member of the Linux Foundation, feel free to contact Andrew Updegrove of the firm of Gesmer Undergone LLP, which provides legal counsel to the Linux Foundation.

# 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](https://lfaidata.foundation)
- › Wiki: [wiki.lfaidata.foundation](https://wiki.lfaidata.foundation)
- › GitHub: [github.com/lfaidata](https://github.com/lfaidata)
- › Landscape: <https://landscape.lfaidata.foundation> or <https://l.lfaidata.foundation>
- › Mail Lists: <https://lists.lfaidata.foundation>
- › Slack: <https://slack.lfaidata.foundation>
- › Youtube: <https://www.youtube.com/channel/UCfasaeqXJBCAJMNO9HcHfbA>
- › 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](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)
- › Approval of Minutes from previous meeting (2 mins)
- › Marquez Project (20 minutes)
- › Acumos Project (20 minutes)
- › Outreach committee update - (10 minutes)
- › LF AI General Updates (2 min)
- › Open Discussion (2 min)

# TAC Voting Members

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

Board Member	Contact Person	Email
AT&T	Anwar Atfab*	<a href="mailto:anwar@research.att.com">anwar@research.att.com</a>
Baidu	Ti Zhou	<a href="mailto:zhouti@baidu.com">zhouti@baidu.com</a>
Ericsson	Rani Yadav-Ranjan*	<a href="mailto:rani.yadav-ranjan@ericsson.com">rani.yadav-ranjan@ericsson.com</a>
Huawei	Huang Zhipeng	<a href="mailto:huangzhipeng@huawei.com">huangzhipeng@huawei.com</a>
IBM	Susan Malaika	<a href="mailto:malaika@us.ibm.com">malaika@us.ibm.com</a>
Nokia	Jonne Soinenen	<a href="mailto:jonne.soininen@nokia.com">jonne.soininen@nokia.com</a>
OPPO	Jimin Jia*	<a href="mailto:jiajimin@oppo.com">jiajimin@oppo.com</a>
SAS	Nancy Rausch	<a href="mailto:nancy.rausch@sas.com">nancy.rausch@sas.com</a>
Tech Mahindra	Amit Kumar	<a href="mailto:Kumar_Amit@techmahindra.com">Kumar_Amit@techmahindra.com</a>
Tencent	Bruce Tao	<a href="mailto:brucetao@tencent.com">brucetao@tencent.com</a>
Zilliz	Jun Gu	<a href="mailto:jun.gu@zilliz.com">jun.gu@zilliz.com</a>
ZTE	Wei Meng	<a href="mailto:meng.wei2@zte.com.cn">meng.wei2@zte.com.cn</a>
Graduate Project	Contact Person	Email
Acumos	Nat Subramanian	<a href="mailto:natarajan.subramanian@techmahindra.com">natarajan.subramanian@techmahindra.com</a>
Angel	Bruce Tao	<a href="mailto:brucetao@tencent.com">brucetao@tencent.com</a>
Egeria	Mandy Chessell	<a href="mailto:mandy_chessell@uk.ibm.com">mandy_chessell@uk.ibm.com</a>
Horovod	Travis Addair*	<a href="mailto:taddair@uber.com">taddair@uber.com</a>
Milvus	Xiaofan Luan	<a href="mailto:xiaofan.luan@zilliz.com">xiaofan.luan@zilliz.com</a>
ONNX	Jim Spohrer (Chair of TAC)	<a href="mailto:spohrer@us.ibm.com">spohrer@us.ibm.com</a>
Pyro	Fritz Obermeyer*	<a href="mailto:fritz.obermeyer@gmail.com">fritz.obermeyer@gmail.com</a>

# Approval of August 26th, 2021 Minutes

Draft minutes from the August 26<sup>th</sup> TAC call were previously distributed to the TAC members via the mailing list

## **Proposed Resolution:**

- › That the minutes of the August 26<sup>th</sup> meeting of the Technical Advisory Council of the LF AI & Data Foundation are hereby approved.

# Annual Review for Marquez



**MARQUEZ**

9/9/2021

**OLFAI & DATA**



# Marquez



## Brief Description:

Marquez is an open source metadata service for the collection, aggregation, and visualization of a data ecosystem's metadata. It maintains the provenance of how datasets are consumed and produced, provides global visibility into job runtime and frequency of dataset access, centralization of dataset lifecycle management, and much more.

## Contributed by:

WeWork in December 2019 as an Incubation Project

## Key Links:

Github: <https://github.com/MarquezProject/marquez>

Website: <https://marquezproject.ai>

Artwork:

<https://github.com/lfai/artwork/tree/master/projects/marquez>

Mailing lists:

- › [marquez-announce](#)
- › [marquez-technical-discuss](#)
- › [marquez-tsc](#)

# Incubation/Graduation Project review criteria

To be accepted into the Graduation stage, a project must meet the Incubation stage requirements plus:

- ~~Have a healthy number of code contributions coming from [at least five organizations](#).~~
  - Datakin, Northwestern Mutual, GetIndata, HSBC, WeWork, ...
- Have reached a [minimum of 1000 stars on GitHub](#).
  - 763 => 76% progress
- Have achieved and maintained a Core Infrastructure Initiative [Best Practices Gold Badge](#).
  - WIP
- ~~Have demonstrated a substantial ongoing flow of commits and merged contributions for the past 12 months\*.~~

(... to be continued on next slide)

# Incubation/Graduation Project review criteria

To be accepted into the Graduation stage, a project must meet the Incubation stage requirements plus:

(... from previous slide)

- Receive the affirmative vote of two-thirds of the TAC and the affirmative vote of the Governing Board.
- ~~Have completed at least one collaboration with another LF AI & Data hosted project~~
  - OpenLineage
  - Egeria
- Have a technical lead appointed for representation of the project on the LF AI & Data Technical Advisory Council.
  - Julien Le Dem

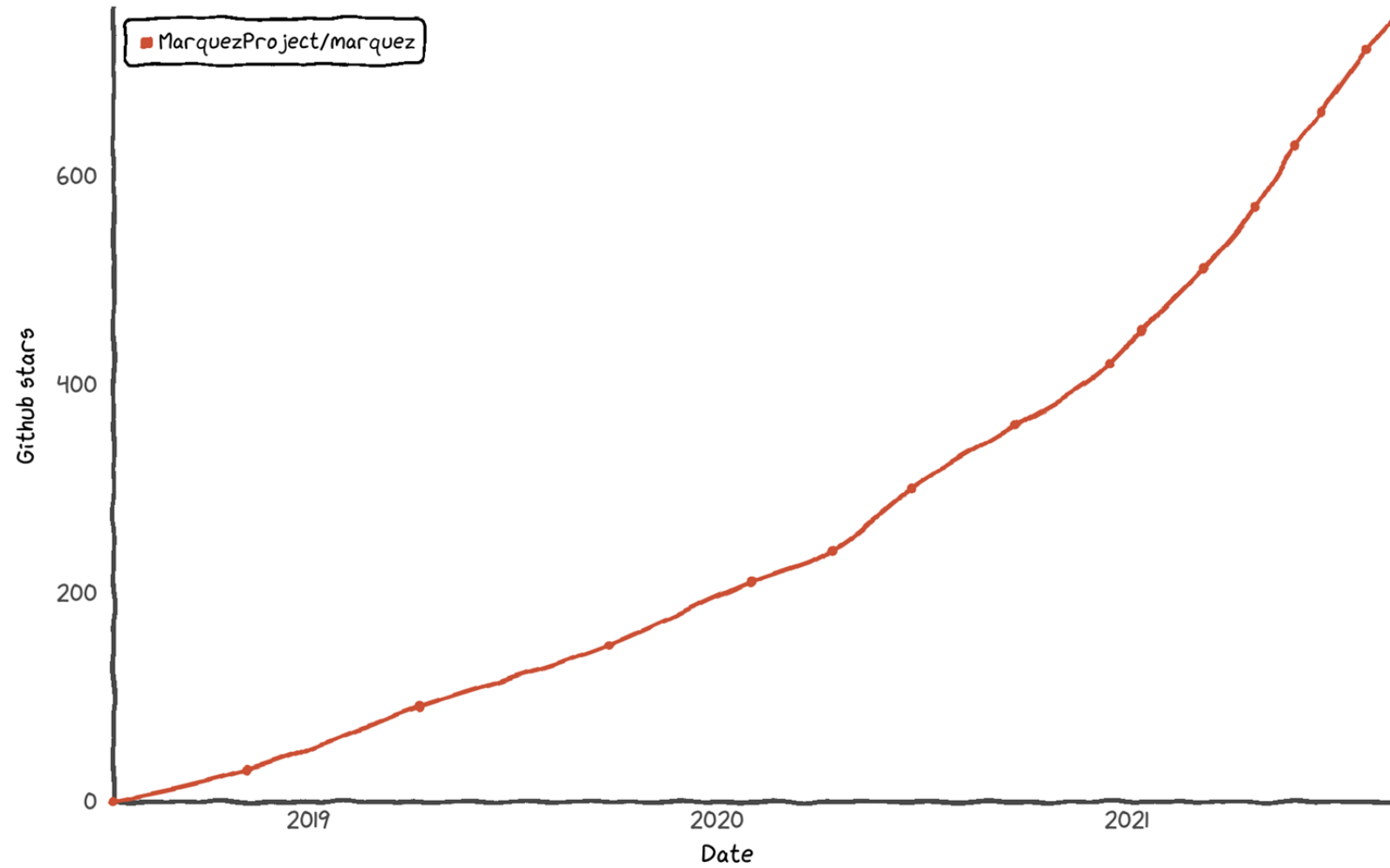
# Organizations contributing



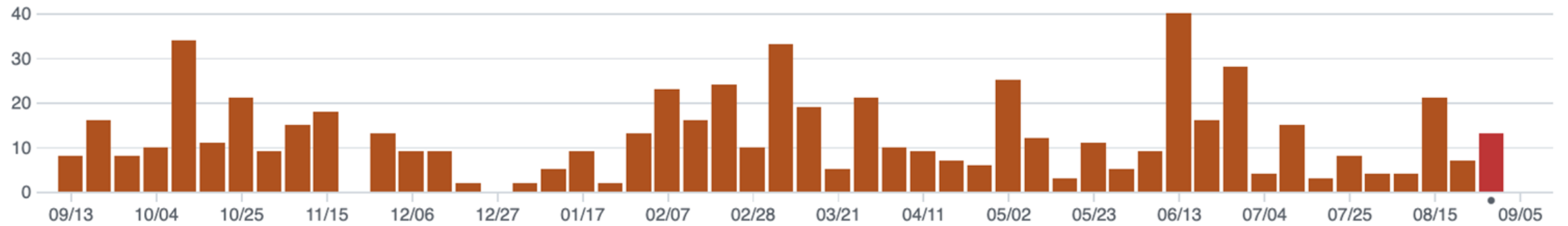
# Stars

Star history

763



# Commits/week



# Contributions (by commit)



263.37K

Lines Of Code Changed



170

Commits



11

Contributors



1

No Of Sub Projects



1

Repositories



## Top 10 Contributors By Commits

[View All](#)

NAME	LINES OF CODE	COMMITTS	%
Willy Lucciuc	88.03K	74	33.42%
Michael Collado	15.38K	38	5.84%
OleksandrDvornik	32.08K	21	12.18%
Maciej Obuchow...	121.87K	14	46.27%
Peter Hicks	3.87K	13	1.47%
Kevin Mellott	258	2	0.10%
Florian Schulz	531	2	0.20%
Dominique Tipton	1.34K	2	0.51%

## Top 10 Organizations By Commits

[View All](#)



# Contributions (by PR)



**85**  
Total PRs Submitted

**20 days**

Average Lead Time

**3**

PRs Yet To Be Merged

**1.6 days**

Average Time To First Review

**3.7 days**

Average PR Cycle Time

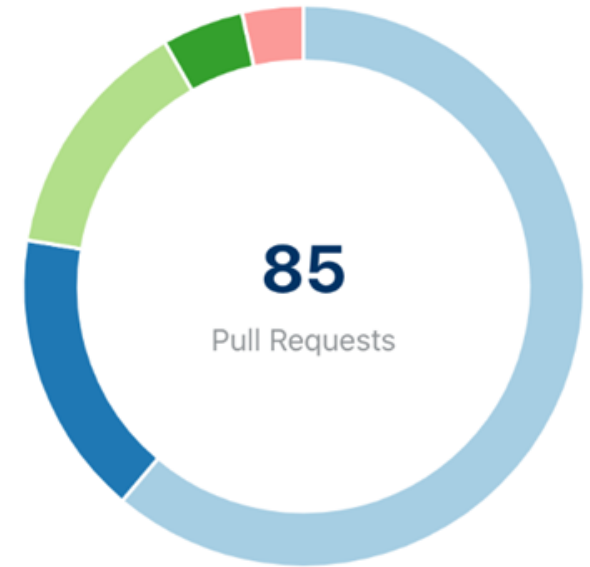
## Top 10 Contributors By PRs

[View All](#)

NAME	PULL REQUESTS	%
Willy Lulciuc	34	40.00%
Maciej Obuchowski	14	16.47%
Michael Collado	14	16.47%
OleksandrDvornik	12	14.12%
Peter Hicks	4	4.71%
Dominique Tipton	2	2.35%
Florian Schulz	2	2.35%
Kevin Mellott	2	2.35%
Nico Ritschel	1	1.18%

## Top 10 Organizations By PRs

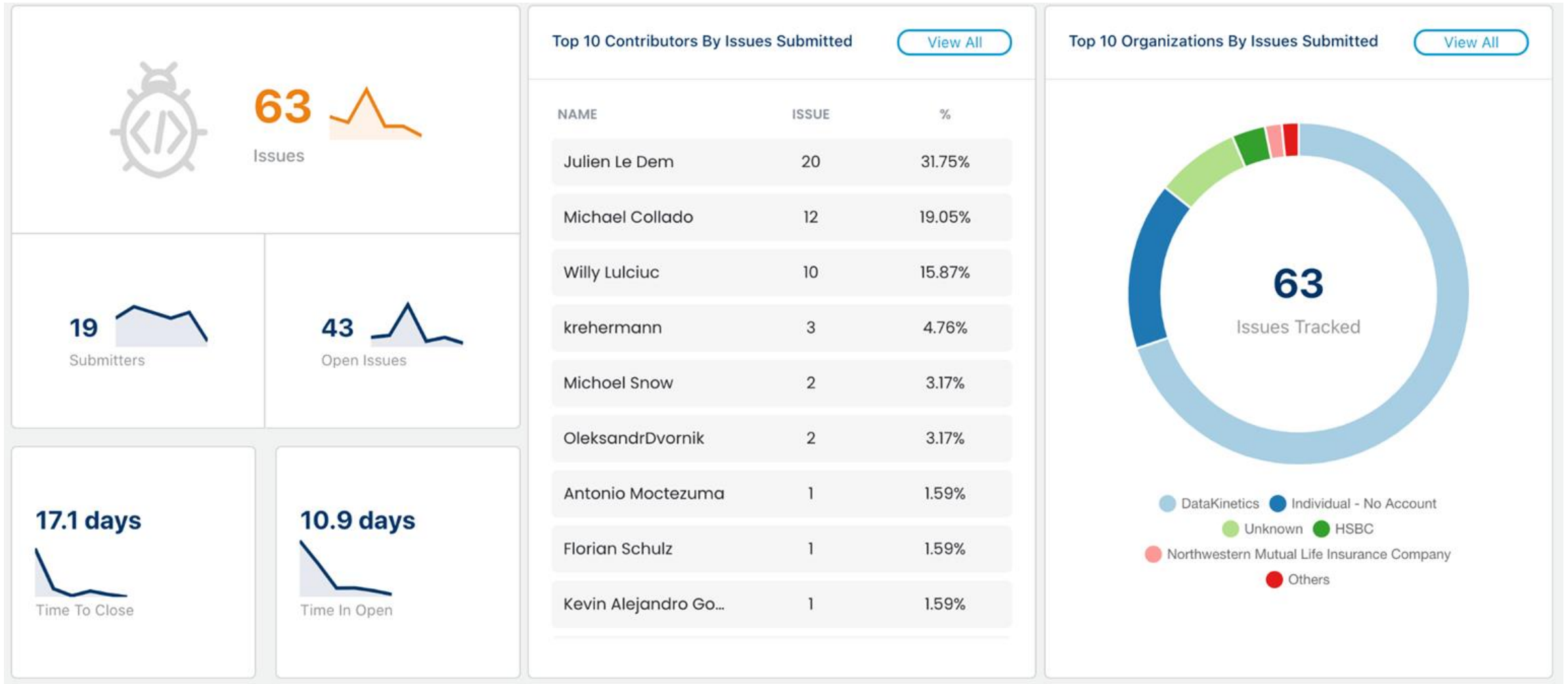
[View All](#)



- DataKinetics
- GetInData sp. z o.o. sp. k.
- HSBC
- Northwestern Mutual Life Insurance Company
- Individual - No Account



# Contributions (by Issue)



# Key Achievements in the past year

- Moved to a mono repo to facilitate development
- Next Generation of Metadata collection
- Major UI improvements
- Major API improvements

# Moved to a monorepo

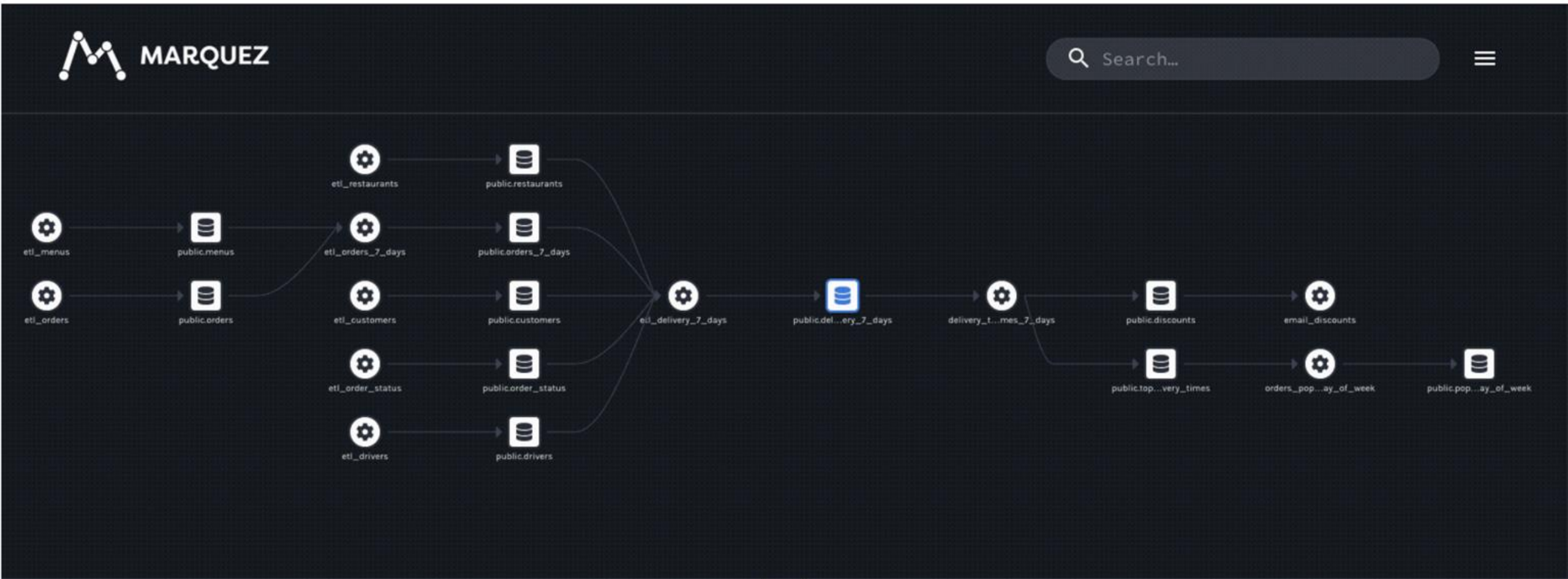
- Facilitates release management
- Clients/UI/API are always in sync
- faster iterations

# Metadata collection

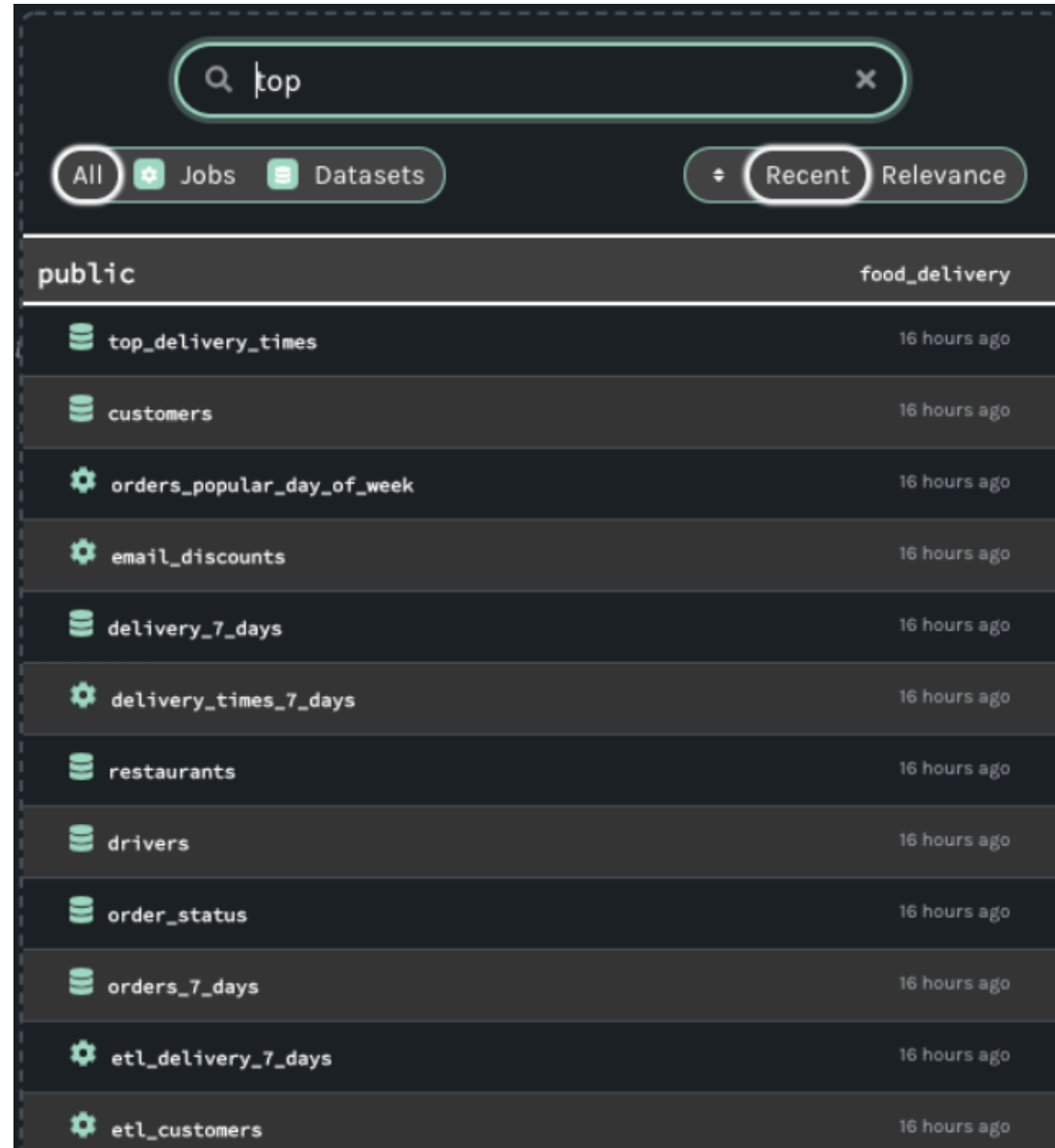


- Evolution of the metadata ingestion API from the original Marquez API to OpenLineage as a new Top Level project
- Marquez became the OpenLineage reference implementation
- Many new integrations:
  - Spark
  - Snowflake
  - dbt
  - BigQuery
  - ...

# Major UI improvements: lineage view



# Major UI improvements: search



# Major API improvements

- More complete APIs:
  - access job and dataset history
  - traverse the run-level lineage graph through job and dataset versions.
  - explore the lineage of a given node through the lineage API
- experimental GraphQL API

# Areas the project could use help on

- More UI improvement contributions
- Easier deployment in various cloud providers (aws, gcp, ...)
- Improving the GraphQL support
- Integration with even more LF AI&Data projects (Amundsen, ...)



# Community Meetings

- Monthly online meetings with the community
- Archived on [YouTube](#)

# Talks

# Feedback on working with LF AI & Data

- The foundation framework is very flexible and doesn't add much overhead to projects
- Interactions in general are very helpful
- Hard to participate to the monthly call from Pacific Time (it's 6am PT, but also 9pm CST)

Annual Review for  
Acumos  
09SEP2021

Amit Kumar  
<Kumar\_Amit@TechMahindra.com>

# Acumos



## Brief Description:

Acumos is an Open Source Platform, which supports design, integration and deployment of AI models. Furthermore, Acumos supports an AI marketplace that empowers data scientists to publish adaptive AI models, while shielding them from the need to custom develop fully integrated solutions.

TSC Chairperson: [Amit Kumar](#)

## Contributed by:

Initiated by Tech Mahindra and AT&T, contributed to LF in May 2018. First Graduated Project under LF AI and Data.

## Key Links:

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

Web Site <https://www.acumos.org/>

Artwork <https://github.com/lfai/artwork/tree/master/projects/acumos>

### Mail Lists

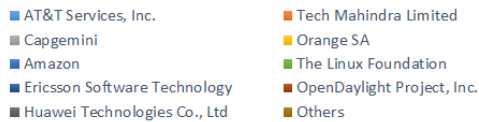
- > [acumosai-announce](#)
- > [acumosai-technical-discuss](#)
- > [acumosai-tsc](#)

# Contributions

## Since 2018



Top Organizations by Commits



Organization	Lines of Code	Commits	%
AT&T Services, Inc.	2,682,041	3033	47.55
Tech Mahindra Limited	2,424,891	6208	42.99
Ericsson Software Technology	314,540	420	5.58
Orange SA	72,666	691	1.29
Capgemini	51,712	286	0.92
Amazon	44,339	328	0.79
Others	29,928	62	0.53
The Linux Foundation	15,238	248	0.27
OpenDaylight Project, Inc.	3,446	1	0.06
Huawei Technologies Co., Ltd	1,940	4	0.03

## Last 1 Year



Top Organizations by Commits



Top Contributing Organizations

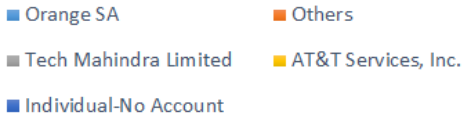
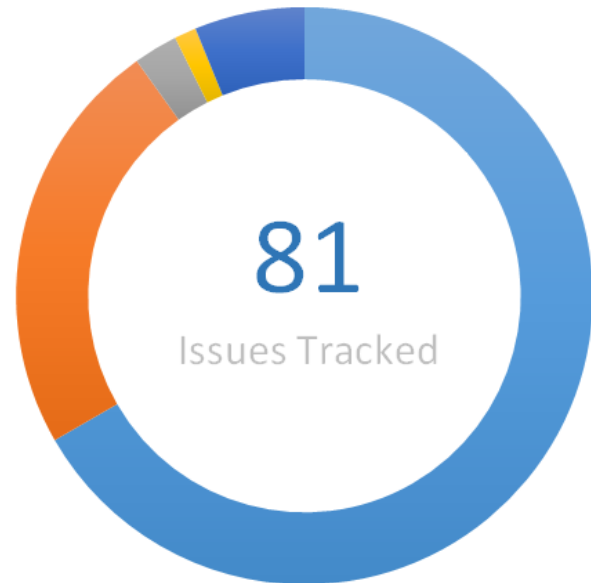
Organization	Lines of Code	Commits	%
Orange SA	31,059	234	62.23
AT&T Services, Inc.	7,770	35	15.57
Tech Mahindra Limited	3,998	67	8.01
The Linux Foundation	3,702	22	7.42
OpenDaylight Project, Inc.	3,356	6	6.72
Others	24	2	0.05
VEXXHOST, Inc.	2	1	0.00

# Issues And Support

## Overview – Last 1 year



Top Organizations by Issues Submitted



Top Organizations by Issues Submitted

Organization	Issues	%
Orange SA	54	66.67
Others	19	23.46
Individual-No Account	5	6.17
Tech Mahindra Limited	2	2.47
AT&T Services, Inc.	1	1.23

Source: <https://insights.lfx.linuxfoundation.org/projects/lfaif2facumos/dashboard;subTab=technical>

## Support Activities Carried Out

### Platform Monitoring

- Post Development activities including staging upgrade, validation, production upgrade, release notes and documentation.
- Environment configuration management, monitoring, and troubleshooting

### Level 1&2 support

- Deployment queries and onboarding support
  - On-going support to Sterling For Acumos environment set up and overall application functions realization.
- Technical response to alerts / notifications / clients requests
- JIRA Ticket Management and Triaging

### Policy, Rules and Grants

- Access Management
- Federation via peer instances and security rule management

# Key highlights in the past year

## › Demeter Release, August 2020

- Cloud Enablement
- On-Boarding
- Licensing
- Training
- ML Work Bench
- Portal

## › Elpis Release, August 2021

- Model Deployment
- On-Boarding
- Portal-Marketplace
- Micro-services

## › LF-AI Day, EU – 22 June 2021

- Focus on open source strategies for machine learning and deep learning.
- Presentation of the new functionalities of the latest Acumos AI Demeter Release as a Portable AI platform.
- Presentations by European startups about their innovative AI products
  - Advanced chat-bot for conversational AI from Levia
  - AI empowering HR from Xtramile
  - Neural search engine from Jina AI
  - Visual automation from Ximilar

Source: <https://lfaidata.foundation/blog/2020/06/26/thank-you-to-orange-for-a-successful-virtual-lf-ai-day-eu/>



# Demeter Release Highlights

## Cloud Enablement

- Containerized platform deployment incorporating cloud native functions, horizontal scaling, and implementation flexibility

## On-Boarding

- CLI message response with the Acumos Docker model
- Support for Pre-dockerized and Dockerized model URI with protobuf file to render models usable in Design studio.

## Licensing

- Activity tracking and reporting – License usage manager (LUM) maintains logs of model usage
- Integration of License module with Portal UI.

## Training

- Bidirectional communication over the federation link between subscriber and supplier instances to support ML life cycle management and continuous learning

## ML Work Bench

- Predictor Manager: Model deployment management and metadata visualization
- Data source: Dataset maintenance data association with Models

## Portal

- Integration of License module with Portal

# Elpis Release Highlights



## Model Deployment

- Initial step towards a fully automated process from model on-boarding to model deployment.
- Connect Acumos with your own CI tool (Jenkins) to trigger Jenkins jobs



## On-Boarding

- Add “deploy” parameter in on-boarding API.
- Related updates to Java, C++, Python, R, ONNX On-boarding Clients
- Allow the use of a SwaggerUI interface for R models



## Portal-Marketplace

- Take into account “deploy” parameter in synchronous and asynchronous micro-service generation
- Create a new Admin page to fulfill Jenkins server parameters



## Micro-services

- Speed up the Micro-service creation of R models with enhanced on-boarding-base-r image
- Use of JSON and SwaggerUI with R models
- Create deployment backend

# Upcoming Features

- Completion of automated model deployment functions.
- GitLab CI support for automated deployment
- API token enablement for onboarding
- MLX-Acumos Collaboration
- Stabilization/Support

# Areas the project could use help on

- Diverse contributions from more organizations
- Community operations like code review, issue management, documentations etc.
- Cross collaborations with other open source projects ( AI explainability 360, AI fairness360, ML exchange and many others)
- Outreach promotions with Linux Foundation channels
- Joint events both online and offline
- MLX – Acumos Collaboration in progress
  - MLX, an IBM contributed LF project, is a Data and AI Assets Catalog and Execution Engine.
  - MLX to use Acumos for Marketplace and ONAP deployment capabilities for MLX models and pipelines

# Feedback on working with LF AI & Data

- › Many thanks to the foundation for the guidance and help.
- › Greatly benefitted from LF AI & Data resources including website, Zoom meetings, Slack, mailing lists, wiki space, etc.
- › Great support for Community Meetings, Release Blogs and Social Media.
- › Looking forward to more correlations and collaborations among the projects in and outside the foundation.
- › More and more professional in the project staging process like sandbox/incubation/graduation

# Outreach Committee Update

September 9, 2021

Jamil Chawki

 THE **LINUX** FOUNDATION

 **LF** AI & DATA

# Announcements

<https://lfaidata.foundation/news/>

# Recent Announcements

1. [Angel new release v3.2, July 29](#)
2. [Acumos new release Elips, Aug 5](#)
3. Delta new incubation project, June 17
4. Substra new incubating project, July 14
5. OpenLineag, new Sandbox project, July 22
6. Tony, new incubation project, Aug 24
7. Kompute new Sandbox project, Aug 26,
8. Egeria Webinar, Visualising Metadata, Sep 13
9. [LF AI & Data Booth](#) at Open Source Summit (OSS)  
– Sept 27 – 30 (Seattle, Washington)
10. DataOps Committee Announcement, Sept 7

# Upcoming Announcements

1. LF AI & Data Day: ONNX Community Virtual Meetup, Oct 21
2. Kedro Incubation Project Announcement
3. KubeCon, CloudNativeCon, [Open Source Summit China](#) - Shanghai, China, Dec 10
4. [LF AI & Data Booth](#) at OSS Open Source Summit Japan, Tokyo, Dec 14-15
5. LF AI & Data New Member Welcome 2021 Q3



# 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@lfaidata.foundation](mailto:pr@lfaidata.foundation) to coordinate in advance (min 2 wks) of your expected release date.

# LF AI & Data PR/Comms

- › **View all recent announcement on the [LF AI & Data Blog](#)**
- › Please follow LF AI & Data on [Twitter](#) (@LFAIDataFdn) & [LinkedIn](#) and help amplify news via your social networks - Please retweet and share!
  - › Also watch for news updates via the tac-general mail list
- › 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@lfai.foundation](mailto:pr@lfai.foundation)

# Upcoming Events

# LF AI & Data Booth @ OSS 2021, Seattle, Washington, Sept 27-30

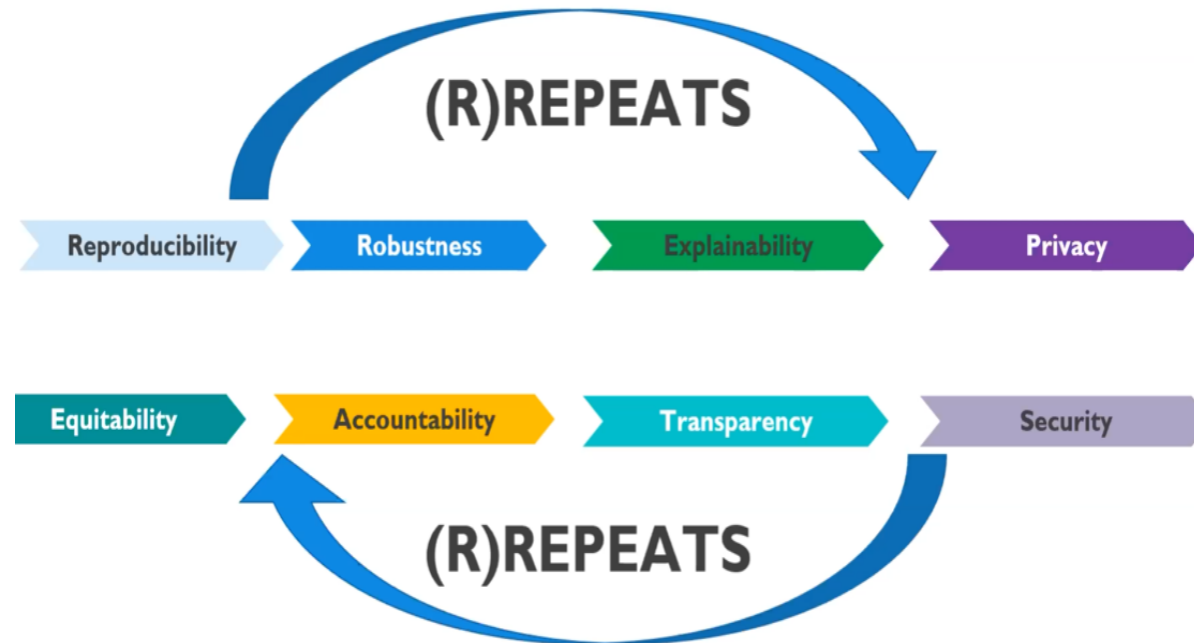
OSS EU Event Site: [Open Source Summit | Linux Foundation Events](#)



# LFAI & Data Trusted AI Principles Webinar, Sept 29

Zoom registration

[https://zoom.us/meeting/register/tJUpc-GoqjwGtH\\_xVM6KiqCc-sPlcGRmQB1](https://zoom.us/meeting/register/tJUpc-GoqjwGtH_xVM6KiqCc-sPlcGRmQB1)



# KubeCon, CloudNativeCon, Open Source Summit, China, Dec 9-10

OSS Event site

<https://www.lfaii.com/kubecon-cloudnativecon-open-source-summit-china/>



# LF AI & Data Booth @ OSS 2021, Tokyo, Dec 14-15

OSS Event site [Open Source Summit Japan | Linux Foundation Events](#)



# All 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](mailto:info@lfaidata.foundation)
  
- › To discuss participation in an event or to host an event, please email [events@lfaidata.foundation](mailto:events@lfaidata.foundation)



# Topics for Discussion

- › What projects & AI use cases would you like to promote?
- › How can we create synergy between Premier/General and Associate Members (we have now 22 Associate members from US, France, UK, Italy, India and China)
- › We need participants (booth staff, speakers, etc.) for the LF AI & Data Events (OSS NA, China, Japan)
- › We need volunteer to Organize an LF AI & Data Day in 2021 (US, EU & APAC)
  - › LF AI Days are regional, one-day events hosted and organized by local members with support from LF AI & Data and its [Projects](#). Event Host is responsible to organize the Day and to provide agenda and other event contents.
- › *Email Jamil Chawki, [jamil.chawki@orange.com](mailto:jamil.chawki@orange.com) for discussion/questions on above*

# Upcoming TAC Meetings

# Upcoming TAC Meetings (Tentative)

- › Sept 23: NNStreamer Annual project review; ForestFlow Annual project review
- › Oct 7, 2021: Ludwig Annual project review, Amundsen Annual project review

Please send agenda topic requests to [tac-general@lists.lfaidata.foundation](mailto:tac-general@lists.lfaidata.foundation)

# LF AI & Data - Ongoing Annual Project Reviews

 LF AI & DATA

Date	Project	Presenter
April 6, 2021	Egeria	Mandy Chessell (slack) - TAC recording / deck
April 6, 2021	OpenDS4all	Andre de Waal (slack) - TAC recording / deck
May 20, 2021	ONNX	Jim Spohrer (slack) - TAC recording / deck
July 15, 2021	EDL	Ti Zhou (slack) deck
July 29, 2021	Angel	Bruce Tao (slack) (confirmed) deck
July 29, 2021	Adlik	Meng Wei (slack) (confirmed) deck
Aug 12, 2021 ( potentially Aug 12)	Sparklyr	Sigrid Keydana Yitao Li (slack) (confirmed) deck
Aug 12, 2021	Milvus	Jun Gu (slack) (confirmed)
Aug 26, 2021	Kendro new project into incubation	Yetunde Dada <yetunde_dada@mckinsey.com>
Sept 9, 2021	Marquez	Julien le Dem (slack) (confirmed)
Sept 9, 2021	Acumos	Amit Kumar (slack) (tentative)
Sept 23, 2021	NNStreamer	MyungJoo Ham (slack) (confirmed)
Sept 23, 2021	ForestFlow	Ahmad Alkilani (slack) (confirmed)
Oct 7, 2021	Ludwig	Piero Molino (slack) (confirmed)
Oct 7, 2021	Amundsen	Mark Grover (slack) (confirmed)
Oct 21, 2021	AI Fairness 360	Animesh Singh (to be asked)
Oct 21, 2021	AI Explainability 360	Animesh Singh (to be asked)
Oct 21, 2021	Adversarial Robustness Toolbox	Animesh Singh (to be asked)
Nov 4, 2021	Horovod	Travis Addair (to be asked)
Nov 4, 2021	FEAST	Willem Pienaar (to be asked)
Nov 18, 2021	SOAJS	Antoine Hage (to be asked)
Nov 18, 2021	Delta	Kun Han (to be asked)
Dec 2, 2021	DataPractices.org	Patrick McGarry (to be asked)
Dec 2, 2021	JanusGraph	Jason Plurad (to be asked)
Dec 16, 2021	Pyro	Fritz Obermeyer (to be asked)
Jan 6, 2021	Datashim	Yiannis Gkoufas (to be asked)
Jan 6, 2022	Flyte	Ketan Umare (to be asked)
Jan 20, 2022	RosaeNLG	Ludan Stoeckle (to be asked)
Jan 20, 2022	SubstraFramework	Camille Marini (to be asked)
	Machine Learning Exchange	Animesh Singh (to be asked)
	VulcanKompute	Alejandro Saucedo (to be asked)
	OpenLineage	Julien le Dem (to be asked)
	MARS	Chris Qin (to be asked)

Schedule: <https://wiki.lfaidata.foundation/pages/editpage.action?pageId=43286684>

# 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:
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# Open Discussion

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