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

May 18, 2023

LF AI & DATA

Antitrust Policy

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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
- 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

- 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 (1 mins)
- Approval of Minutes from previous meeting (2 mins)
- Vote on the project lifecycle doc (2 mins)
- Resilience from XPRIZE proposed new sandbox project review (40 minutes)
- Open Discussion

TAC Voting Members - Please note

Please ensure that you do the following to facilitate smooth procedural quorum and voting processes:

- Change your Zoom display name to include your First/Last Name, Company/Project Represented
  - example: Nancy Rausch, SAS
- State your First/Last Name and Company/Project when submitting a motion
  - example: First motion, Nancy Rausch/SAS

TAC Voting Members - Please note

- TAC members must attend consistently to maintain their voting status
- After 2 absences voting members will lose voting privileges
- Voting privileges will only be reinstated after attending 2 meetings in a row

TAC Voting Members

Note: we still need a few designated backups specified on [wiki]

With the new attendance and voting rule adopted by the TAC, the number of eligible voting members varies per week and is tracked here. Please see meeting minutes on the TAC Wiki to

Member Company or Graduated Project	Membership Level or Project Level	Voting Eligibility	Country	TAC Representative	Designated TAC Representative Alternates
4paradigm	Premier	Voting Member	China	Zhongyi Tan	
Baidu	Premier	Voting Member	China	Jun Zhang	Daxiang Dong, Yanjun Ma
Ericsson	Premier	Voting Member	Sweden	Rani Yadav-Ranjan	
Huawei	Premier	Voting Member	China	Howard (Huang Zhipeng)	Charlotte (Xiaoman Hu), Leon (Hui Wang)
Nokia	Premier	Voting Member	Finland	@Michael Rooke	@Jonne Soininen
OPPO	Premier	Voting Member	China	Jimmy (Hongmin Xu)	
SAS	Premier	Voting Member	USA	*Nancy Rausch	JP Trawinski
ZTE	Premier	Voting Member	China	Wei Meng	Liya Yuan
Adversarial Robustness Toolbox Project	Graduated Technical Project	Voting Member	USA	Beat Buesser	Kevin Eykholt
Angel Project	Graduated Technical Project	Voting Member	China	Jun Yao	
Egeria Project	Graduated Technical Project	Voting Member	UK	Mandy Chessell	Nigel Jones, David Radley, Maryna Strelchuk, Ljupcho Palashevski, Chris Grote
Flyte Project	Graduated Technical Project	Voting Member	USA	Ketan Umare	
Horovod Project	Graduated Technical Project	Voting Member	USA	Travis Addair	
Milvus Project	Graduated Technical Project	Voting Member	China	Xiaofan Luan	Jun Gu
ONNX Project	Graduated Technical Project	Voting Member	USA	Alexandre Eichenberger	Andreas Fehlner, Prasanth Pulavarthi, Jim Spohrer
Pyro Project	Graduated Technical Project	Voting Member	USA	Fritz Obermeyer	

Minutes approval

LF AI & DATA

Approval of May 4, 2023 Minutes

Draft minutes from the May 4 TAC call were previously distributed to the TAC members via the mailing list

Proposed Resolution:

- That the minutes of the May 4 meeting of the Technical Advisory Council of the LF AI & Data Foundation are hereby approved.

Project Lifecyle Document approval

LF AI & DATA

18MAY2023

Approval of Project Lifecycle Document

Proposed Resolution:

- The Project Lifecycle document for LF AI & Data Foundation is approved.

Note:

- All changes have been incorporated
- Link: https://docs.google.com/document/d/1VFoMcXlbOKa4cqTLkaWX-8_7-uh11hZT3b6p0wvjUHM/edit#heading=h.gjdgxs

Resilience

XPRIZE

amir@bayspring.com

LF AI & DATA

Project Resilience

A Platform to Inform and Help Tackle
Global Decision-Augmentation Problems

Project Summary

May 2023

Agenda

- Project Mandate and History
- Platform Outline
- State of MVP
- Architecture
- Vision for Final Platform
- Call for Help and Contribution

Contribution to Linux Foundation

Project Statement

Neutral Holding

- Global, not for profit
- Partnered with a UN agency, ITU

Open governance model

- Transparent and open governance model
- Instill trust in contributors and adopters in the design of the project and assets
- Neutral management of projects' assets by the foundation

Growing community opportunity

- Increase visibility of project through LF ecosystem
- Opportunities to collaborate with other hosted Climate projects

PROJECT RESILIENCE

A GLOBAL COLLABORATION FOR AN OPEN AND PUBLICLY AVAILABLE SERIES OF CLOUD BASED AI PREDICTORS and Prescription tools

Project Resilience Goals

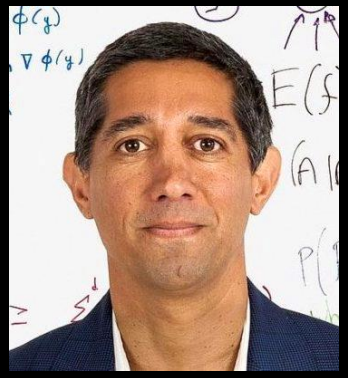
A platform to enable collaboration on building predictive and prescriptive models that can be used by any community

A platform to inform and help tackle global decision-augmentation problems.

Identifying data and guidelines to support sustainable models.

Focus on multi stakeholders and variety of users globally

The Team



Babak Hodjat

Risto Miikkulainen

Jennifer Stave

Olivier Francon

Amir Banifatemi

Initial validation: Collaboratively Tackling the Pandemic

Needed:

- A place to collaborate
- Interoperability and Standards
- More useful Dataset built from contributed data
- More useful Models built from contributed models

https://evolution.ml/demos/npidashboard/

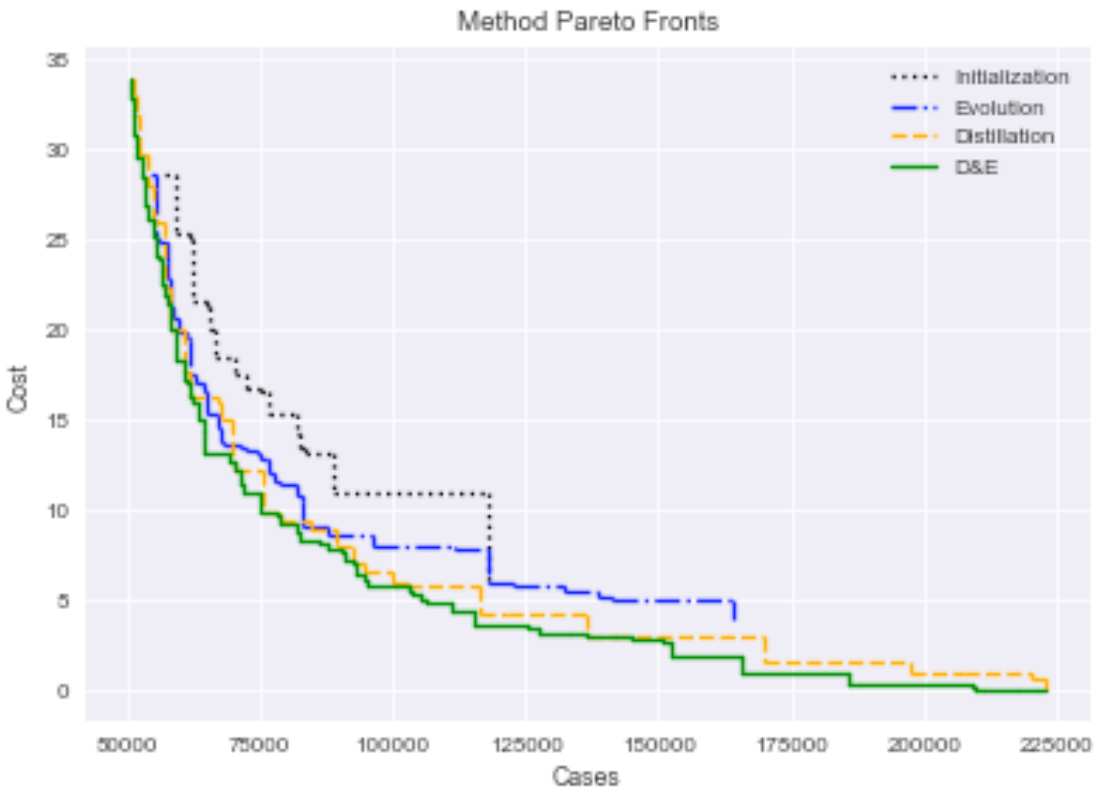
An xprize competition:

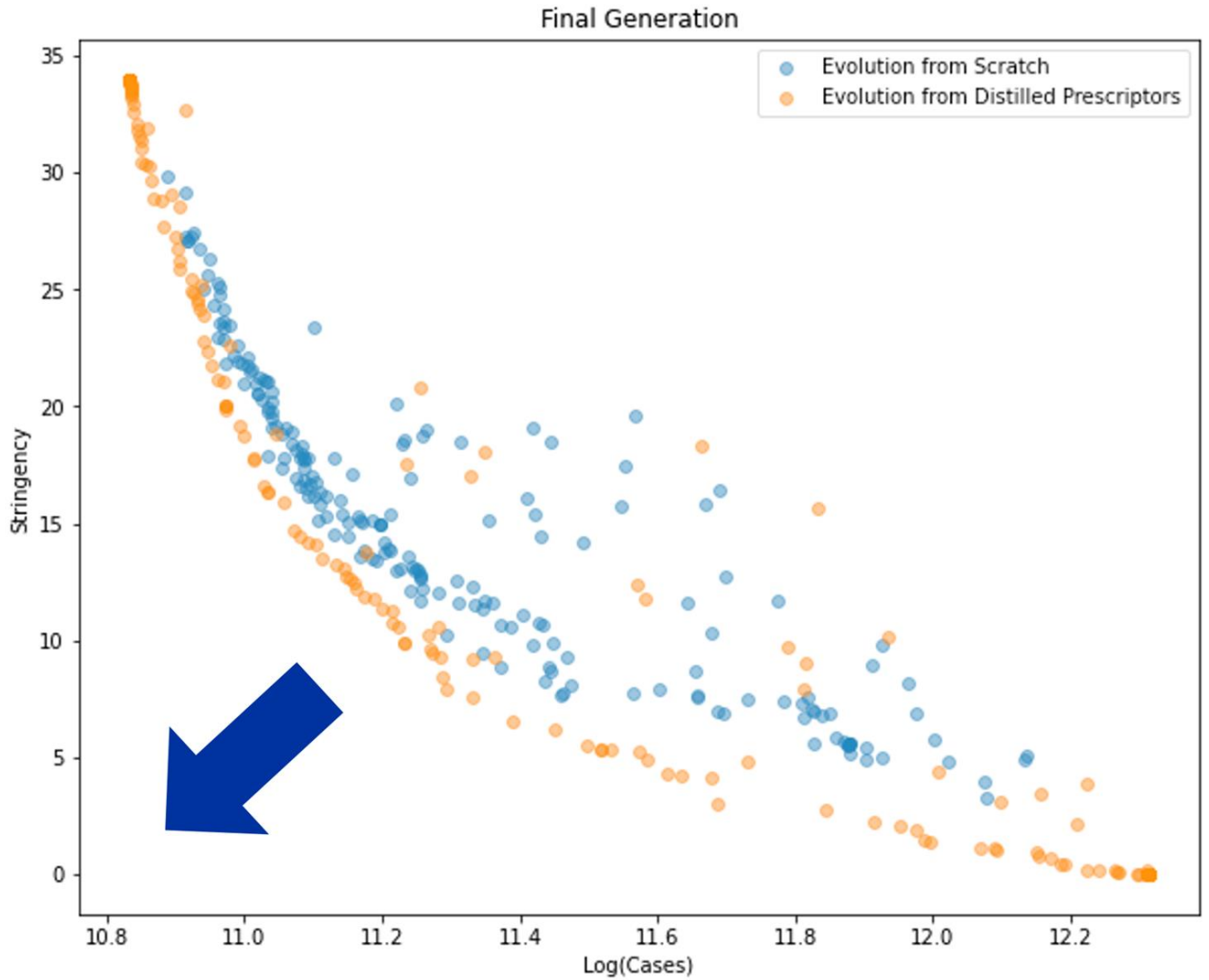
104 Data Science Teams

From 28 Countries

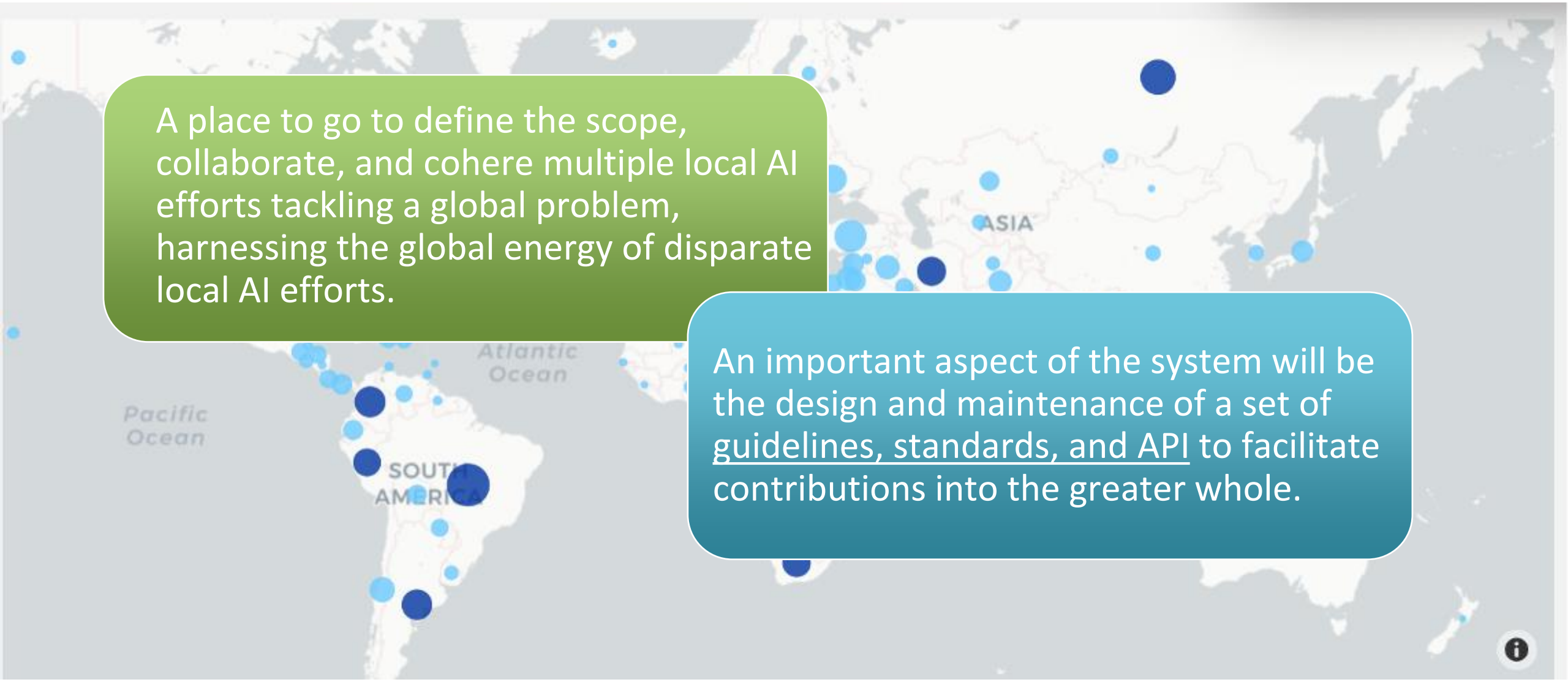
Global and Regional Data and Models

Collaborative Models are Better Together!





Next step: Project Resilience Platform in other domain



A place to go to define the scope, collaborate, and cohere multiple local AI efforts tackling a global problem, harnessing the global energy of disparate local AI efforts.

An important aspect of the system will be the design and maintenance of a set of guidelines, standards, and API to facilitate contributions into the greater whole.

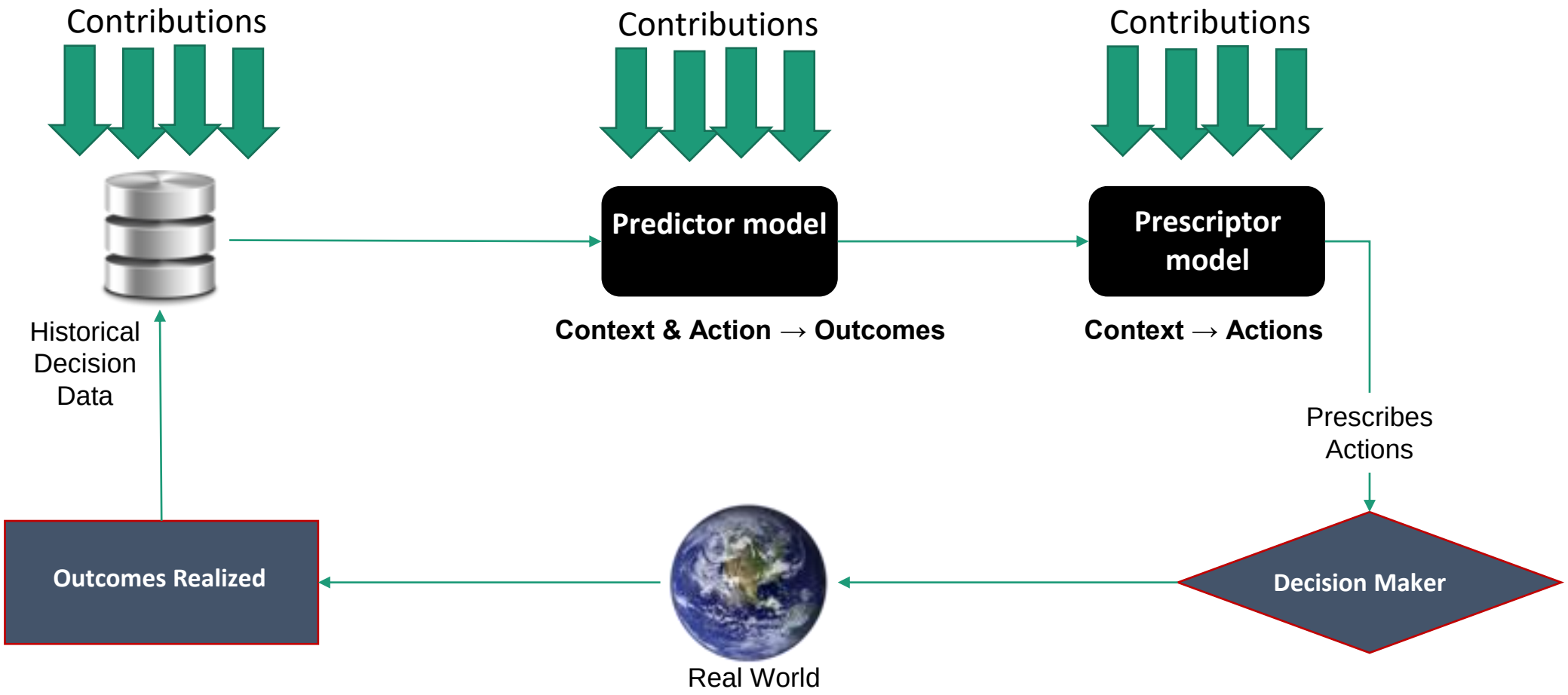
Project Status

Current working group started in **Spring, 2022**. More than 20 volunteers signed up to collaborate on selecting a use-case as well as architecting and developing an MVP-level portal. The team meets online every other week as well as coordinating over slack (projectresiliencehq.slack.com), and contributions are tracked in our GitHub Account (https://github.com/orgs/Project-Resilience). The group is working toward a goal of **launching a first open platform using a climate project as an example - target: 2023/2024.**

PLATFORM

PLATFORM OVERVIEW

AI Contribution Points



MVP Assumptions

DATA ALREADY EXISTS

DATA IS PUBLIC AND DOES NOT HAVE SECURITY/PRIVACY CONSTRAINTS

SUBMITTED MODELS ARE CALLED AND RUN ON SUBMITTER LOCAL COMPUTE

FULL PROCESS OF MODEL TRAINING IS DISCLOSED BY CONTRIBUTORS

Project Resilience data exploration

Data requirements defined

Data should cover variations of decisions sufficiently

Observe the outcome of an action in a reasonable amount of time (e.g., less than 3 months)

Data should include context, actions, outcomes for each observation

Data should come from reliable, trusted, scientific, ethical sources

Project Resilience Domain example: Climate

Context
(e.g., geographic and local qualities)

Region

Population

GDP

Energy usage

Land cover usage

Cost of energy

Action
(e.g., transitioning to clean energy)

Regional plant transitions proposed

Subsidies

Policies

Adaptation actions

Outcomes
(e.g., reduce emissions and cost)

Emissions (CO2, N2O, CH4, ...)

Energy production

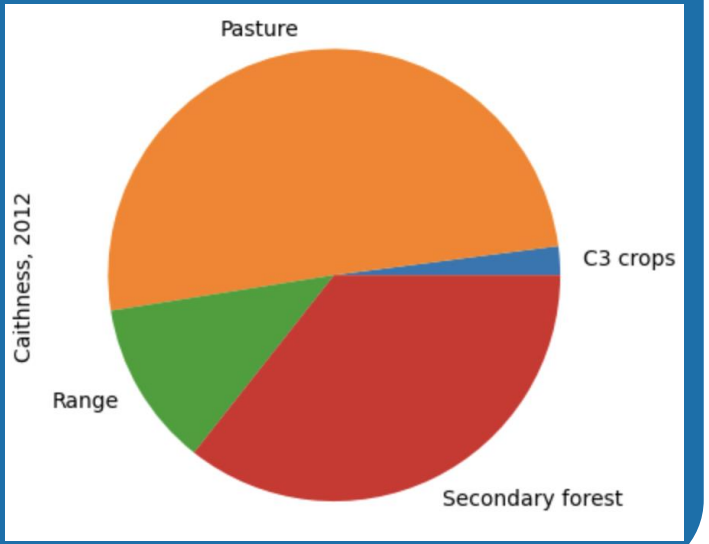
Transition cost

Project Resilience data exploration example:

IPCC - Global Carbon Budget - Emissions from Land Use Change

Context

- *Region*
- *Land cover usage*



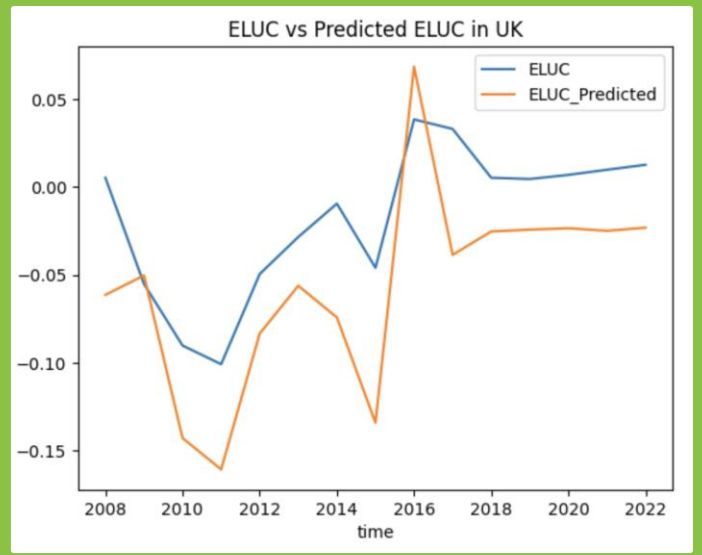
Actions

- *Land Use Change*

C3 crops diff	0.000283
Pasture diff	-0.003074
Range diff	-0.000801
Secondary forest diff	0.003570
Urban diff	0.000000

Outcomes

- *CO2 Emissions*
- *Transition cost*

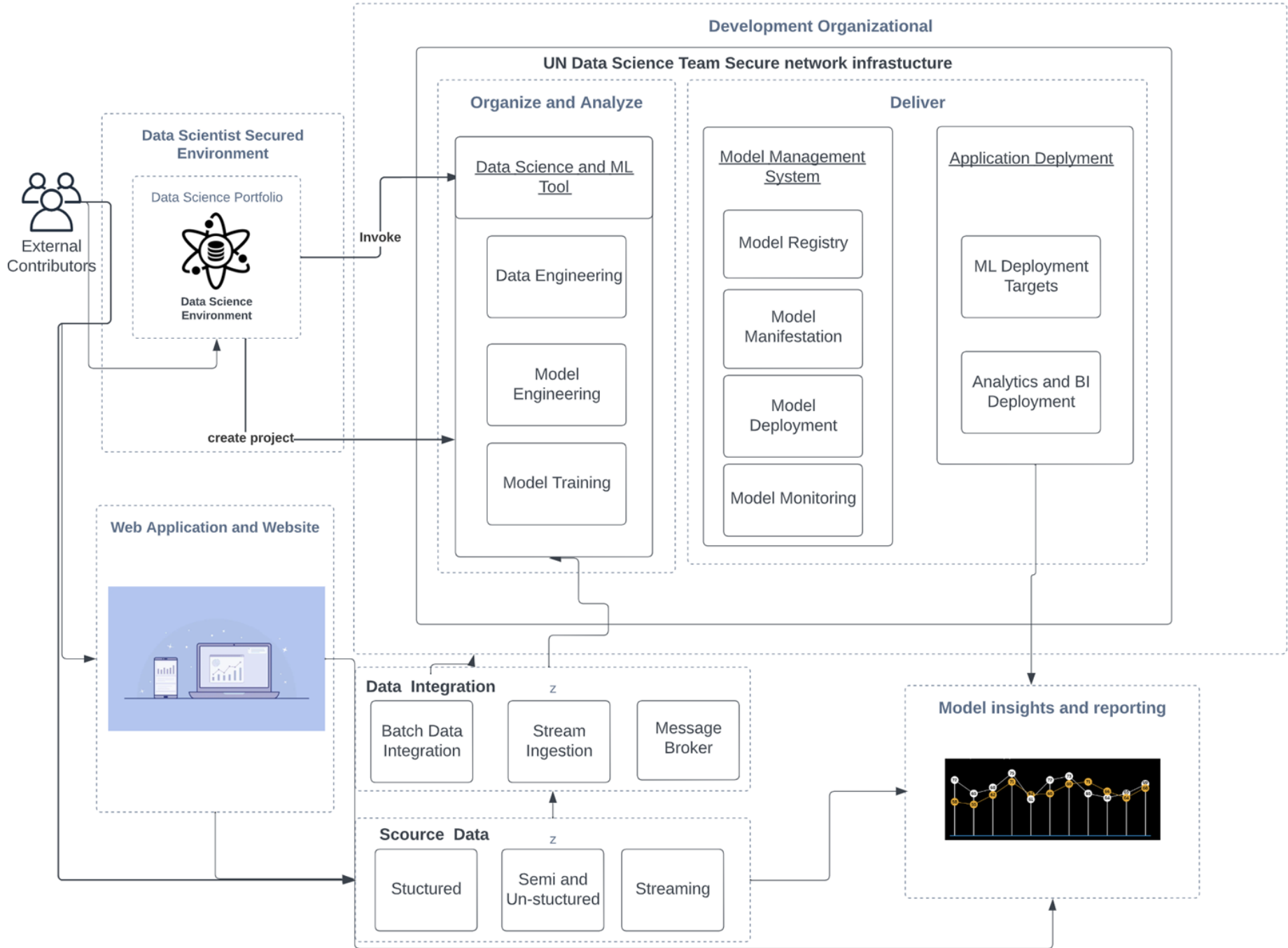


ARCHITECTURE FOR MVP

Architecture requirements:

- Component 1 and 7: Secure AI Development Environment for AI community contributors (e.g., AWS Service Catalog)
- Component 2: Data Science Developer IDE (e.g., SageMaker Studio domain)
- Components 3 and 4: MLOps for automated model development and deployment workflow (e.g., SageMaker MLOps project templates)
- Components 5 and 6: Automated quality, governance, and regulations for Models (CI/CD workflows)
- Component 8: Data Store (Secured Data Lake)
- Component 9: Insight analysis (e.g., Amazon QuickSight and Web App)
- Component 10: Bring your Own Model

Conceptual UN AI/ML Architecture



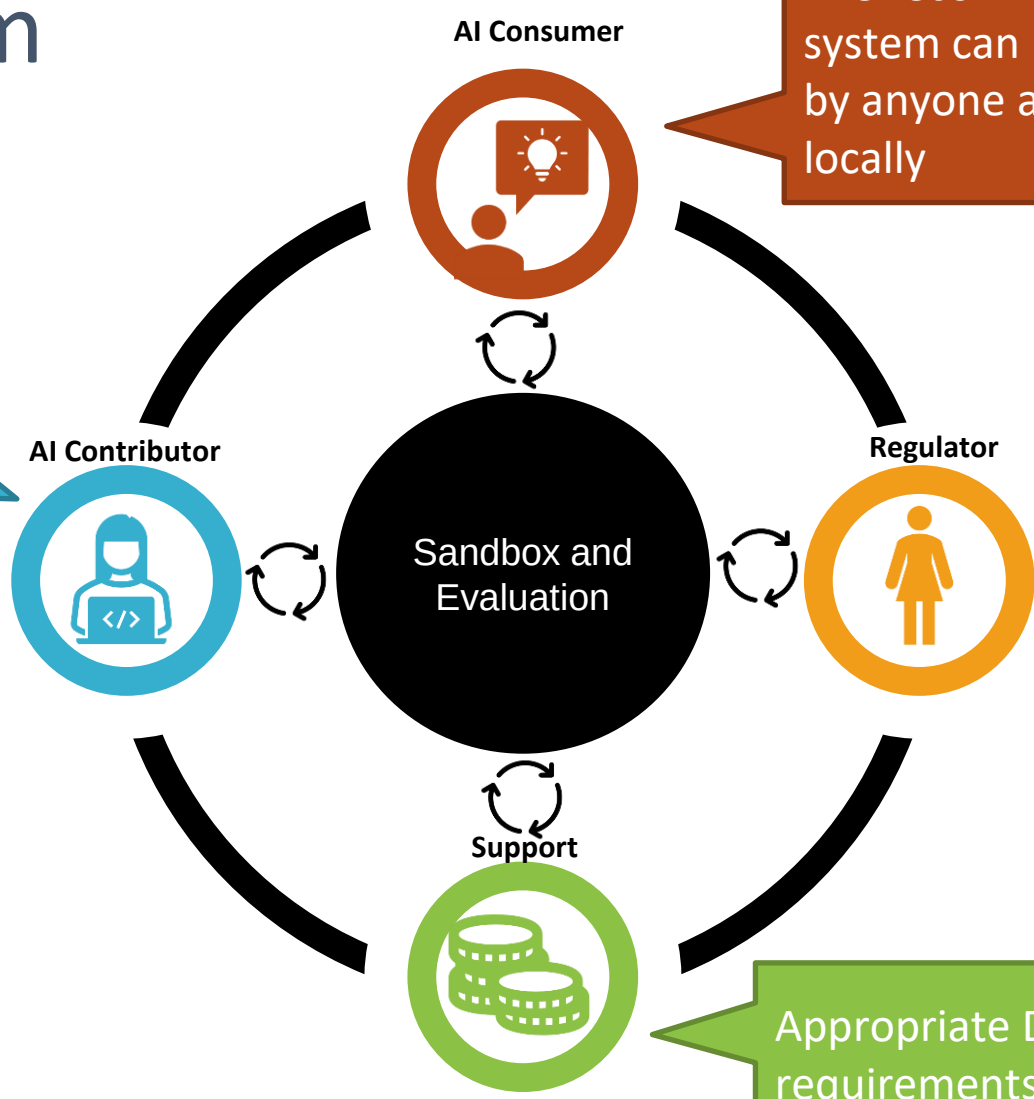
Next steps to release MVP

Ensembling of submitted models that include predictor models (take context and actions as input, predict outcomes) and prescriptor models (take context as input, prescribe actions optimizing desired balance of outcomes)

Automated module to assess and compare models by making calls to models hosted by 3rd parties or submitters

Guidelines for AI Contributors on data requirements and format (context/action/outcomes column) and lifecycle considerations

Final Platform



The recommendations of the system can be used globally by anyone and implemented locally

Data scientists and ML experts can submit solutions that comply with certain API standards, maybe in the form of Predictor/Prescriptors

An evaluation testbed is provided to assess and compare submissions quantitatively

Appropriate Data and Funding requirements can be showcased/explained

Volunteers Needed

- Tech program management
- AI/ML
- Data Science
- Dev and System Ops
- UI/UX
- Legal / Security / Privacy

Data Contributions Needs

- To identify contributors and their roles (relationships) as data suppliers (sources)
- To evaluate conversion of collected data into publicly available data and/or data sets for predictors
- To get help validate data quality with appropriate KPIs
- To get data clearing house support as a platform to aggregate the data
- To curate data with common data models for shared taxonomy
- To support data features (context/action/ outcomes) and repositories (local storages)
- To support data life cycle management
- To ensure security, privacy, and trust as well as legal compliance including data ownership

Standard opportunity: Data sharing in a standardized way with interoperable interfaces

Project Outcome expected with LF

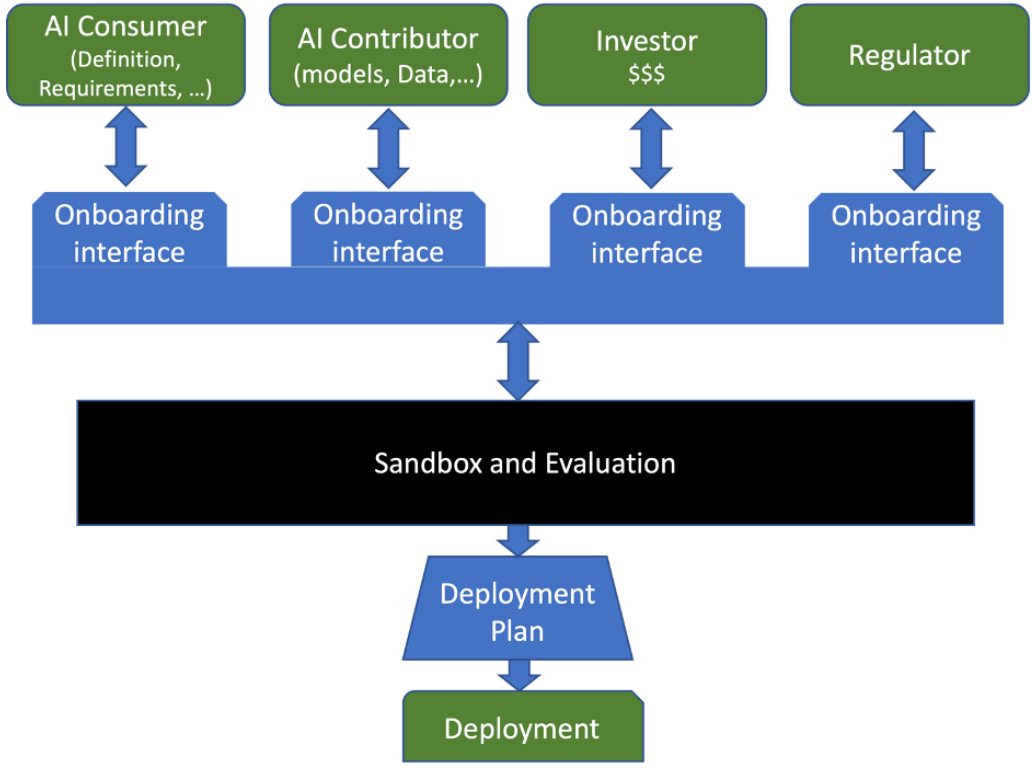
⇒ An open portal + platform to integrate constituents of a collaborative AI decision-augmentation system

- Help decision making authorities and organizations tackling issues such as climate change, ecological disasters, disease control, water management, economic inequity, diversity and inclusion…

⇒ A framework for collaboration on AI predictive and prescriptive models

⇒ Allow for :

- Local Learnings, Data agency, and Model development and deployment in various communities
- All models harnessed into a greater global whole



Approval of Resilience as a Sandbox Project

Proposed Resolution:

- Approval of Resilience as a Sandbox project of the LF AI & Data Foundation are hereby approved.

Thank You!

LF AI & DATA

Upcoming TAC Meetings

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Upcoming TAC Meetings

- June 1 – AutoML" from Fujitsu, new Sandbox project proposal
- June 15 – EthicalAI from Fujitsu, new Sandbox project proposal

Please note we are always open to special topics as well.

If you have a topic idea or agenda item, please send agenda topic requests to tac-general@lists.lfaidata.foundation

Open Discussion

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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

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