



**AI for Health**

An ITU Focus Group  
In collaboration with WHO

# WELCOME

Prof. Marcel Salathé, Digital Epidemiology Lab, EPFL

[marcel.salathe@epfl.ch](mailto:marcel.salathe@epfl.ch)

 @marcelsalathe



# Brief History

Creation FG: July 2018

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1st Workshop & Meeting: WHO, Geneva, September 2018

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4th Workshop & Meeting: Shanghai, April 2019

# Thank you!

## EPFL Tech for Impact: Beatrice Scarioni, Julia Binder Marc Gruber

### About

Our vision is that EPFL becomes a leading institution for technologies that benefit society.

As one of Europe's most innovative and productive scientific institutions at the forefront of cutting-edge research and innovation, EPFL is uniquely positioned to play a pioneering role for providing innovative technological solutions to the grand societal challenges of our time. Tech4Impact is EPFL's social impact and sustainability initiative and its key instrument for enhancing the University's social and environmental impact in the areas of education, research, and innovation. As one of the core strategic projects at **EPFL's Vice Presidency for Innovation**, Tech4Impact provides a multi-stakeholder platform involving students and researchers as well as large enterprises, NGOs, start-ups, and society at large.







# AI evaluation: status quo

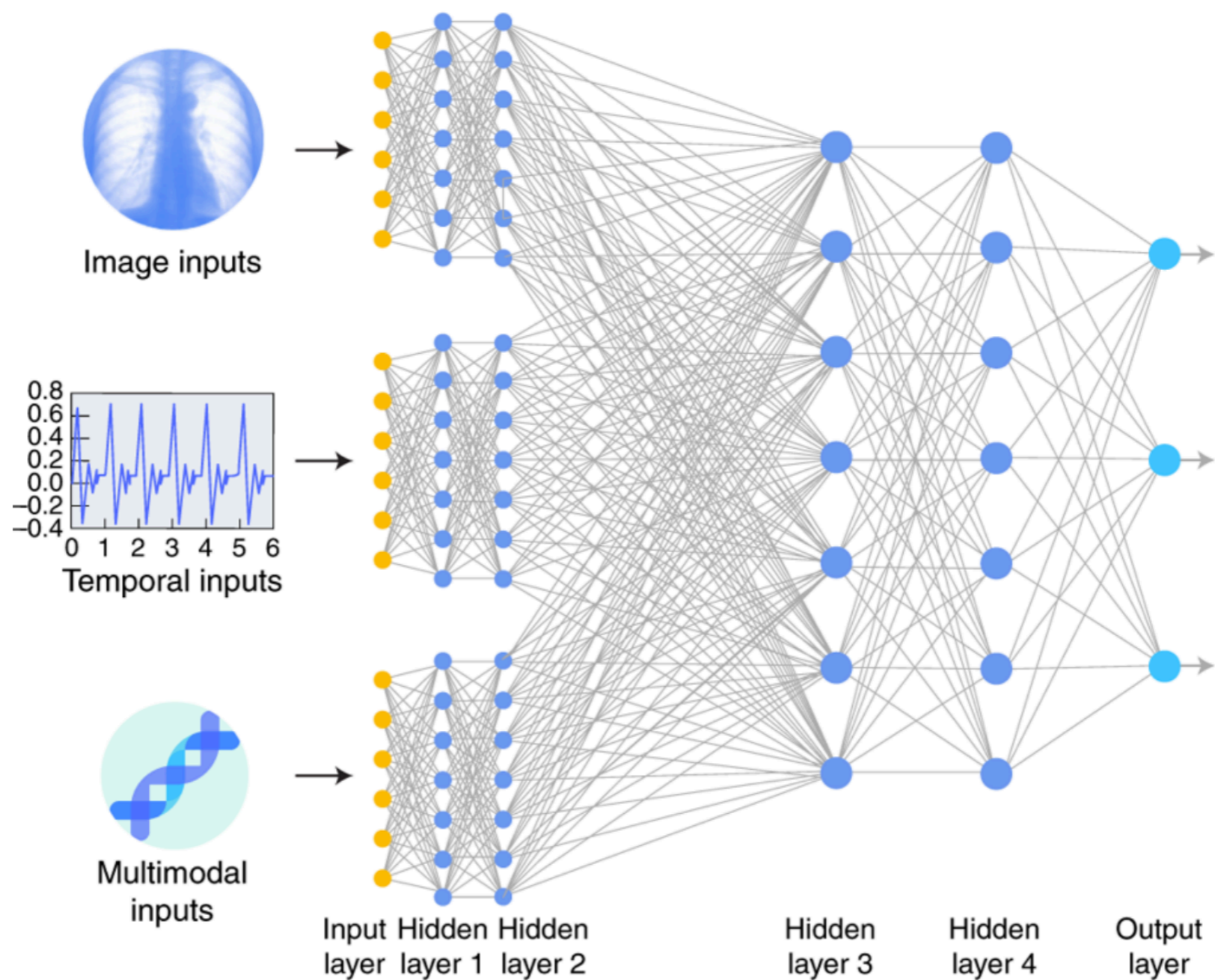
Modern AI - generally based on deep learning (artificial neuronal networks). These networks are trained on data.

AI = software + data

Generally open  
(Tensorflow, PyTorch, etc)

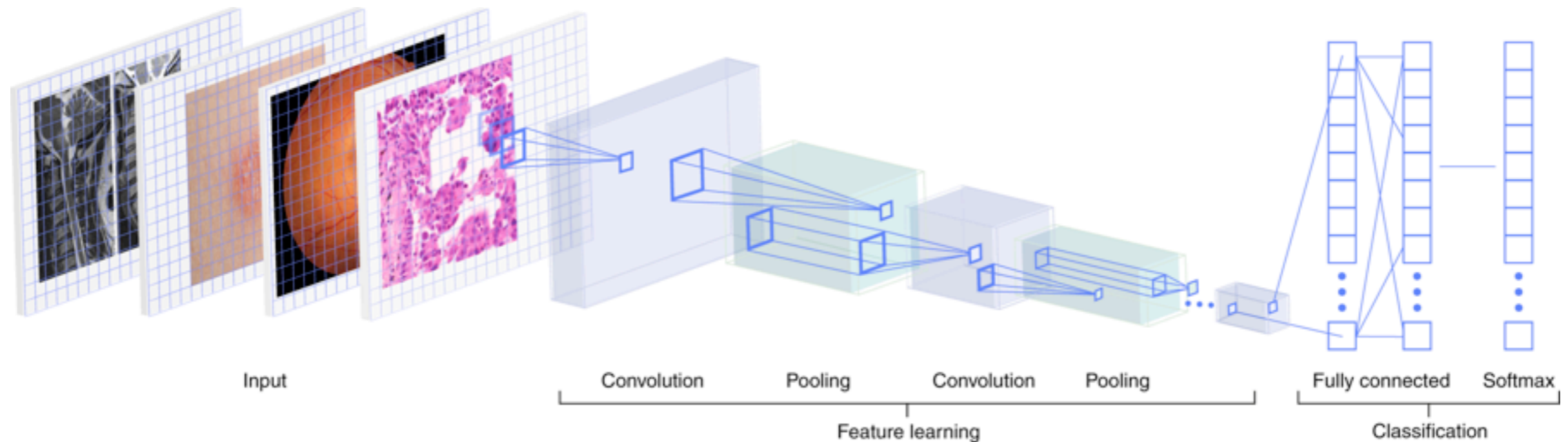
Sometimes open,  
often closed

# AI evaluation: status quo



# AI evaluation: status quo

Modern deep learning is generally “end-to-end”: from the input layer to the output layer, there is no domain expertise needed for the training of the network.



# AI evaluation: status quo

Consequence: very “permissible” and accessible field - essentially, everyone can train deep learning networks provided s/he finds some good data to train on.

**Advantage:** extremely dynamic field, welcoming to outsiders

**Disadvantage:** There are no established ways to compare AI models - they exist as code, papers, apps, etc. (“Wild West”)

# AI evaluation: status quo

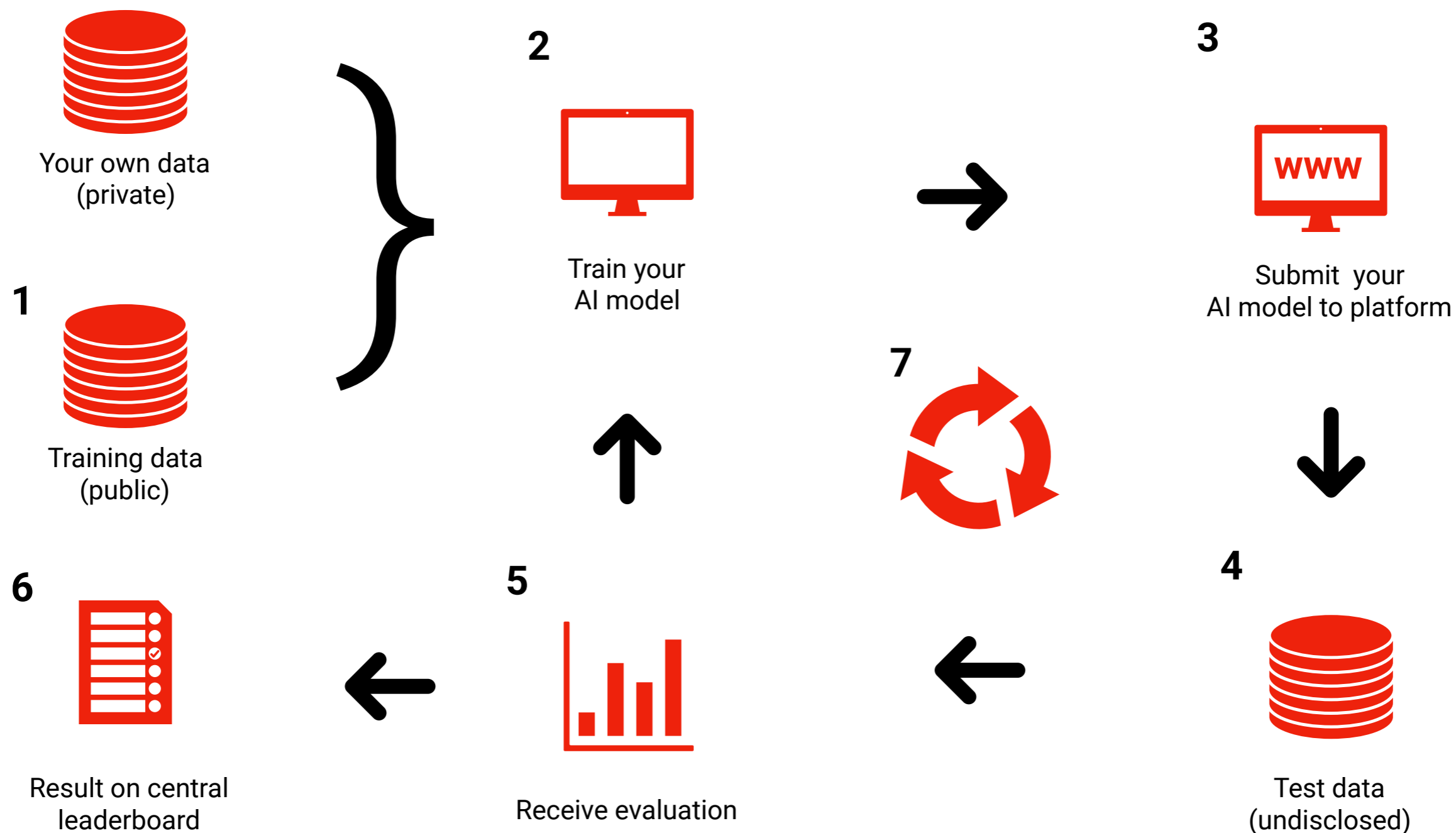
If you are a regulator (or in the policy making process in any shape or form), how are you going to deal with this?

**Good Solution:** We need benchmarks.

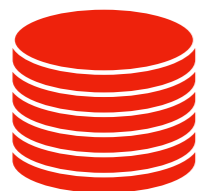
**Ideal Solution:** We need benchmarks that relevant stakeholders can agree upon.

That is why we need technology experts and policy experts to work together (hence the FG AI4H).

# AI evaluation: proposed framework

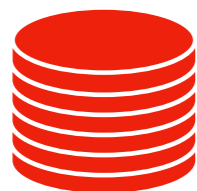


# AI evaluation: proposed framework



Your own data  
(private)

1. Training modern AI models requires high quality data as input.



Training data  
(public)

The FG can help identify high quality, open data sets to make the AI development more accessible and inclusive.

# AI evaluation: proposed framework



Train your  
AI model

**2.** Participants build AI models based on public data and other (private) data sources



Submit your  
AI model to platform

**3.** FG will provide an online platform where participants can submit their AI model for evaluation.

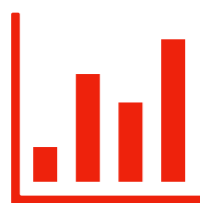


# AI evaluation: proposed framework



Test data  
(undisclosed)

4. The model will be evaluated on a undisclosed test set. The FG oversees the process to ensure the highest integrity, quality, fairness, and confidentiality of this data set.



Receive evaluation

5. Following the evaluation of the test set, participants will receive the results of the evaluation.

# AI evaluation: proposed framework



Result on central  
leaderboard

**6.** The results can be shown on a central leaderboard. This allows the global community to check the current state-of-the-art performances in the field.



**7.** The evaluation process can be designed to be ongoing, as it enables stability and continuation.

# Benefits of proposed model

- ✓ Process is open and inclusive
- ✓ Process adds substantial clarity to the field (no more guessing about “what is the current status in the field?”, “how well does my algorithm perform?”)
- ✓ Being able to execute code allows for undisclosed test sets, and for replicable results.

# Benefits of proposed model

- ✓ Process can ensure a maximum amount of fairness.

Undisclosed data set: unbiased test data sets  
require unbiased algorithms to perform well!