The Awards

Five awards:

- **€2,500** for the **winning** team
- **€1,000** for the **second-place** team
- **€500** for each of the **three teams** that finish in third place.

The Challenge

Given a trained black-box model:

- **Augment** the prediction task with various types of explanations.
  - a collection of explanation methods is available in **XAI-LIb.**

- **Evaluate** the impact of explanations on user experience from multiple perspectives:
  - Explanation content (e.g., faithfulness, consistency)
  - Explanation format (e.g., Is it compact? Does it have a confidence interval?)
  - User's expertise and objectives (relevant, accordant to prior knowledge)

- **Develop** a *use-case scenario* that demonstrates the contribution of explanations to the understanding of AI decisions.

Datasets & Tasks

- **Churn prediction** identifying customers most likely to churn
  - Datasets with explicit churn label:
    - Credit Card Churn [data][notebook]
    - Mobile Churn [data][notebook]

- **Uplift modeling** identifying customers most likely to respond and act upon receiving a marketing promotion
  - Dataset: Marketing Promotion Campaign [data][notebook]

Evaluation criteria for explanations

	Co-12 Property	Description
Content	**Correctness**	Describes how faithful the explanation is w.r.t. the black box.
		Key idea: Nothing but the truth
	Completeness	Describes how much of the black box behavior is described in the explanation.
		Key idea: The whole truth
	Consistency	Describes how deterministic and implementation-invariant the explanation method is.
		Key idea: Identical inputs should have identical explanations
	Continuity	Describes how continuous and generalizable the explanation function is.
		Key idea: Similar inputs should have similar explanations
	Contrastivity	Describes how discriminative the explanation is w.r.t. other events or targets.
		Key idea: Answers "why not?" or "what if?" questions
	Covariate complexity	Describes how complex the (interactions of) features in the explanation are.
		Key idea: Human-understandable concepts in the explanation
Presentation	**Compactness**	Describes the size of the explanation.
		Key idea: Less is more
	Composition	Describes the presentation format and organization of the explanation.
		Key idea: *How* something is explained
	Confidence	Describes the presence and accuracy of probability information in the explanation.
		Key idea: Confidence measure of the explanation or model output
User	**Context**	Describes how relevant the explanation is to the user and their needs.
		Key idea: How much does the explanation matter in practice?
	Coherence	Describes how accordant the explanation is with prior knowledge and beliefs.
		Key idea: Plausibility or reasonableness to users
	Controllability	Describes how interactive or controllable an explanation is for a user.
		Key idea: Can the user influence the explanation?

- Discuss **at least two properties** for each explanation dimension (content, presentation, user)

- The more exhaustive you are, the more high will be your work's evaluation.

Nauta, Meike, et al. "From anecdotal evidence to quantitative evaluation methods: A systematic review on evaluating explainable ai." *ACM Computing Surveys* 55.13s (2023): 1-42.

Research Questions

1. How can explanations be interpreted when the black-box's decision is wrong?
2. How do explanations work with different confidence levels of the black-box?
3. How can explanations help in finding the cases when black-box is "right for the wrong reasons"?
4. How can explanations support user's understanding of the black-box in multiple interactions?
5. How does presenting different explanations support usability?
6. How do different explanations support users with different levels of expertise?

Explore **at least three Research Questions.**

What to deliver

Final report (min 5 pages, max 10 pages)

- A description of the methods used, the analysis of the explanation results considering the multiple dimensions shown in the previous slide.
- Reports must be submitted via EasyChair.
- Link to suggested template

Presentation (4-5 slides, 5 minutes) with:

- Problem Statement & Rationale
- Research Questions
- Main contributions / Proposed Solutions
- Conclusions

WI-FI

SSID: SoBigData

PSW: G39SoBigData!

Telegram Channel

Wearing XAI T-Shirts is strongly suggested for the entire Hackathon!!

Agenda

	Friday	Saturday
09:00-09:30	**Registration**	Working on the project
09:30-10:00	**Introduction to FAIR and XAI Projects (Fosca Giannotti)**	
10:00-10:30	**Introduction to XAI Lib (Salvatore Rinzivillo) + Expected results (Simone Piaggesi)**	
10:30-11:00	**Coffee Break**	
11:00-11:30	Working on the project	
11:30-12:00		**Coffee Break**
12:00-12:30		**Project submission**
12:30-13:00		**round of presentation (5min each)**
13:00-13:30		
13:30-14:00	**Lunch**	
14:00-14:30		
14:30-15:00	Working on the project	
15:00-15:30		
15:30-16:00		
16:00-16:30		
16:30-17.00		
17:00-17:30	**Coffee Break**	
17:30-18:00	Working on the project	
18:00-18:30		
18:30-19:00		
19:00-19:30		
19:30-20:00		
20:00-20:30	**Dinner**	
20:30-21:00		
21:00-21:30	Working on the project	
21:30-22:00		
22:00-22:30		
22:30-23:00		
23:00-23:30		
23:30-00:00		