



# Ekimetrics.

## Responsible AI

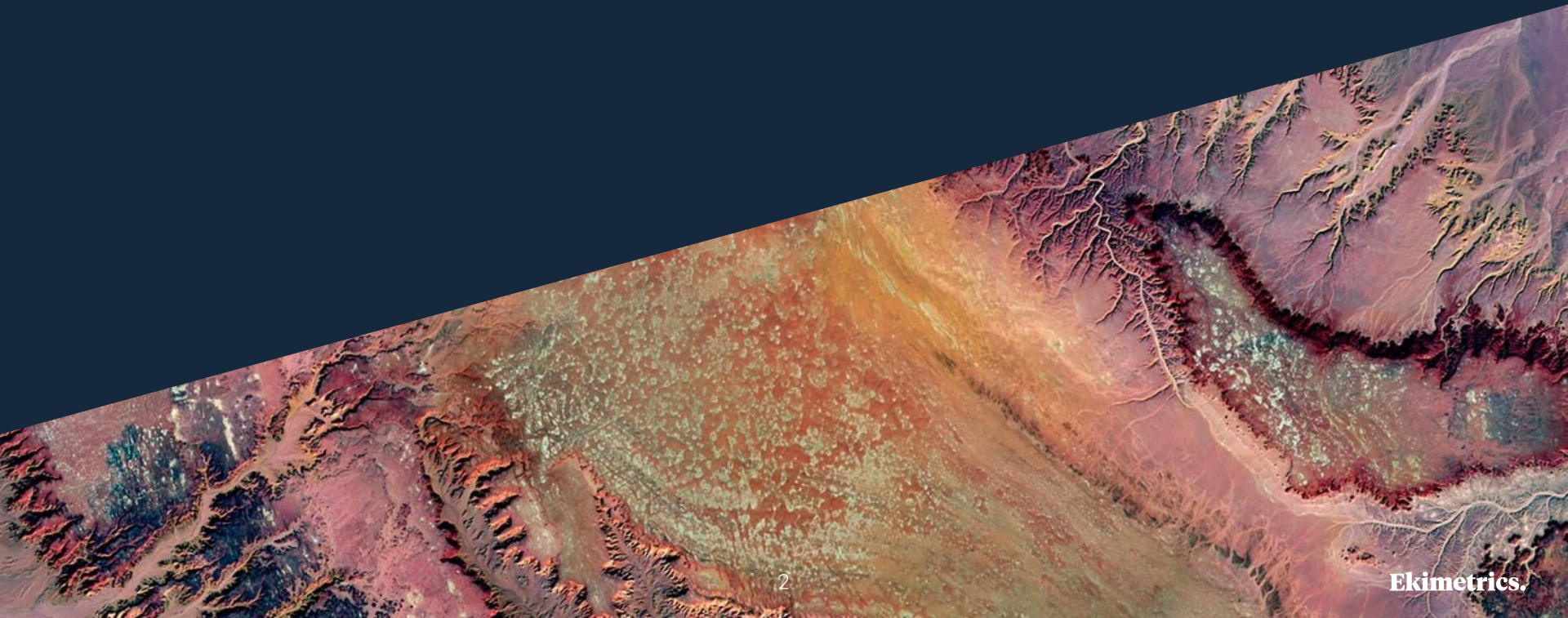
Helping businesses in becoming aware of their impact and implement models and solutions responsibly.

PARIS | LONDON | NEW YORK | HONG KONG

**Ekimetrics.**

Data science for business

# Kick Off Hackathon





# Ekimetrics, European leader in data science for sustainable business transformation with +320 tech profiles and +1,000 projects since 2006

## Who we are ?

**17**

**YEARS**  
EXPERIENCE  
IN DATA SCIENCE

**+400**

**DATA**  
Profiles

**+350**

**CLIENTS**

**+50**

**COUNTRIES**  
WHERE WE LEAD  
PROJECTS

### Data & AI

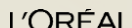
Technological  
expertise on Data  
Science and AI to  
multiply the positive  
impact

### Sustainability & Climate

Expertise on  
sustainability and climate  
issues and how data can  
accelerate transition

### Business

Proximity to the  
businesses and  
understanding of  
economic issues



# Our mission and purpose

Data Science for sustainable business transformation

## A good company

Delivering Data Science for business solutions **since 2006** with **400+ tech profiles** in 4 countries

A company that **commits to higher standards & responsibilities**, “Entreprise à Mission” since April 2023, on the road towards BCORP in 2024 and Net Zero by 2030

One of the 30/150 precursor members of the 2021-2022 “**Convention des Entreprises pour le Climat**”



## Doing sustainable AI

100% of Eki employees **trained and aware on social & environmental challenges** (Climate Fresk, Climate trainings, Vendredi challenges).

**Strongly against using technology for the sake of technology.** We invest in R&D to develop unbiased and low-carbon footprint AI algorithms, and always rethink why we solve problems and how we can develop frugal tech solutions.

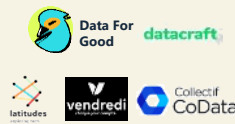
**Open sourcing** our best practices on our Eki.Lab website  
<https://ekimetrics.github.io/>

## For positive impact

**Partnerships** with sustainability & climate specialists



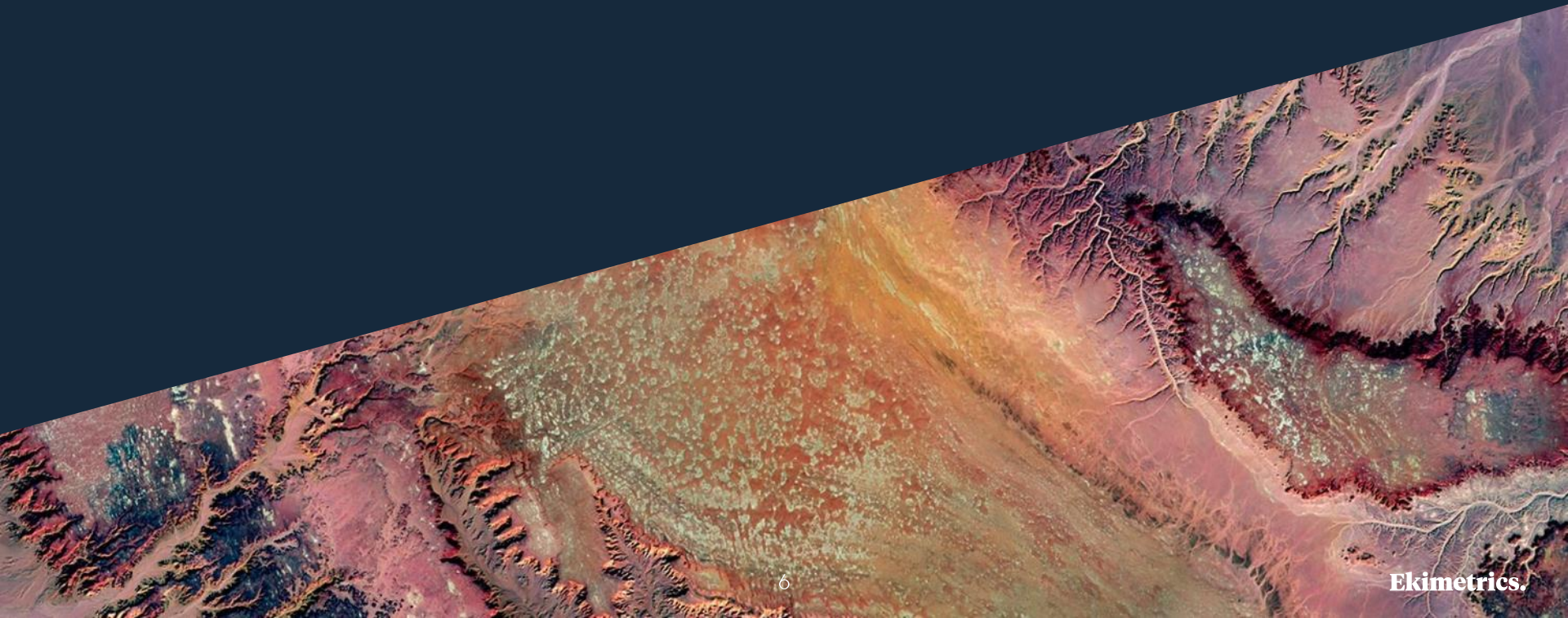
Active member of the “tech for good” ecosystem



**AI for Sustainability** solutions help businesses perform within the planetary boundaries and transition to a low-carbon economy



# Responsible AI At Ekimetrics





# The Responsible AI team



Annabelle



Clément



Ana



Joséphine



Jeanne



Milan

**Sustainability**

**Legal**

**DEA**

**Inno**

**Com**

# Our AI methodology is Responsible and certified by LabelIA

**Advanced Responsible AI  
Label certifying our  
approach**



**We believe fairness and  
transparency of AI  
generate value**

Limitation of the risk of damage to  
image and reputation

Higher efficiency and accuracy of the  
model

Better reproducibility and durability  
of models

Anticipate the future regulation

**All our Responsible AI  
tools lean on seven pillars**

Transparency ● Interpretability ● Explicability

Security ● Vigilance

Robustness ● Sustainability

Customized tools to address Responsible AI  
issues



Model Cards

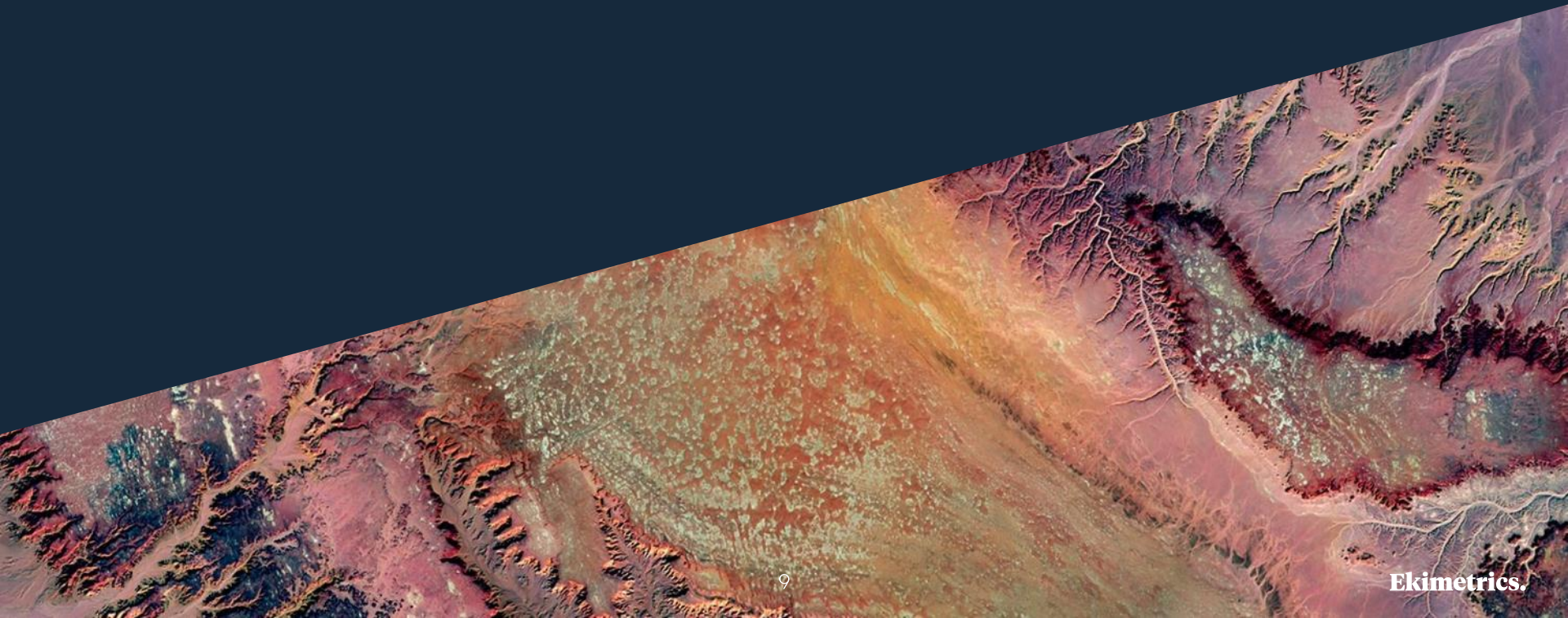


Project  
Management &  
Technical  
Checklists



CO2 Tracker

# Subject and Support team





# Subject and deliverables

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During this hackathon, you will be asked to act as if you were Ekimetrics consultants working for a tech firm that wants to design a solution to **automatize a part of their recruitment process**, while making sure this solution **does not present any discriminatory bias**.

## Deliverables

**Unbiased candidate selection model** for this company's HR department, based on the dataset provided.

Presentation of this solution with a **10 minutes ppt presentation** in front of a Jury, followed by 5 minutes Q&A, at Ekimetrics office,.

The presentation must include:

- **Technical specificities** of the model (decisions, performance...)
- Its **responsible** aspect (fairness score...)
- Its business advantage for the company (productivity gains, financial benefit...)

## Evaluation grid

The group work will be evaluated according to the following criterias:

- Chosen fairness metric scores
- Model performance
- Business advantage of the solution
- Group presentation

# Hackathon recommended structure & timeline

## Structure

### 0. Data exploration and bias identification

Given dataset and notebook

### 1. Think of a solution to pass by those biases

Discussion with the Eki consultant team to guide you

### 2. Implement the solution and challenge it

Accuracy, recall, ethic ?

### 3. Thinks of business analytics in your solution

ROI, business impact?

### 4. Final Presentation

PPT presentation, 10 min per group

## Timeline

### 6.11 5:30pm - Hackathon Kick Off

**Where:** Online meeting

**Who:** Ekimetrics team, jury members, students

### 6.11 > 24.11 - Hackathon Support

**Where:** Slack

**Who:** Ekimetrics team available daily to answer student's questions

**Where:** Online meeting

**Who:** Q&A sessions organized online

### 24.11 2pm- Final Presentations

**Where:** Ekimetrics Office (36 rue Lafayette)

**Who:** Ekimetrics team, jury members, students

### 4pm- Afterwork

## About us



**Hiba JOUINI**

*Data Science Consultant*



**Leopold  
MENDES-CHARINHO**

*Data Science Consultant*



**Hamza  
EL FERGOUGUI**

*Data Science Consultant*



**Jeanne DUBOIS**

*Data Science Consultant*



**Matteo BENAUD**

*Data Science Consultant*

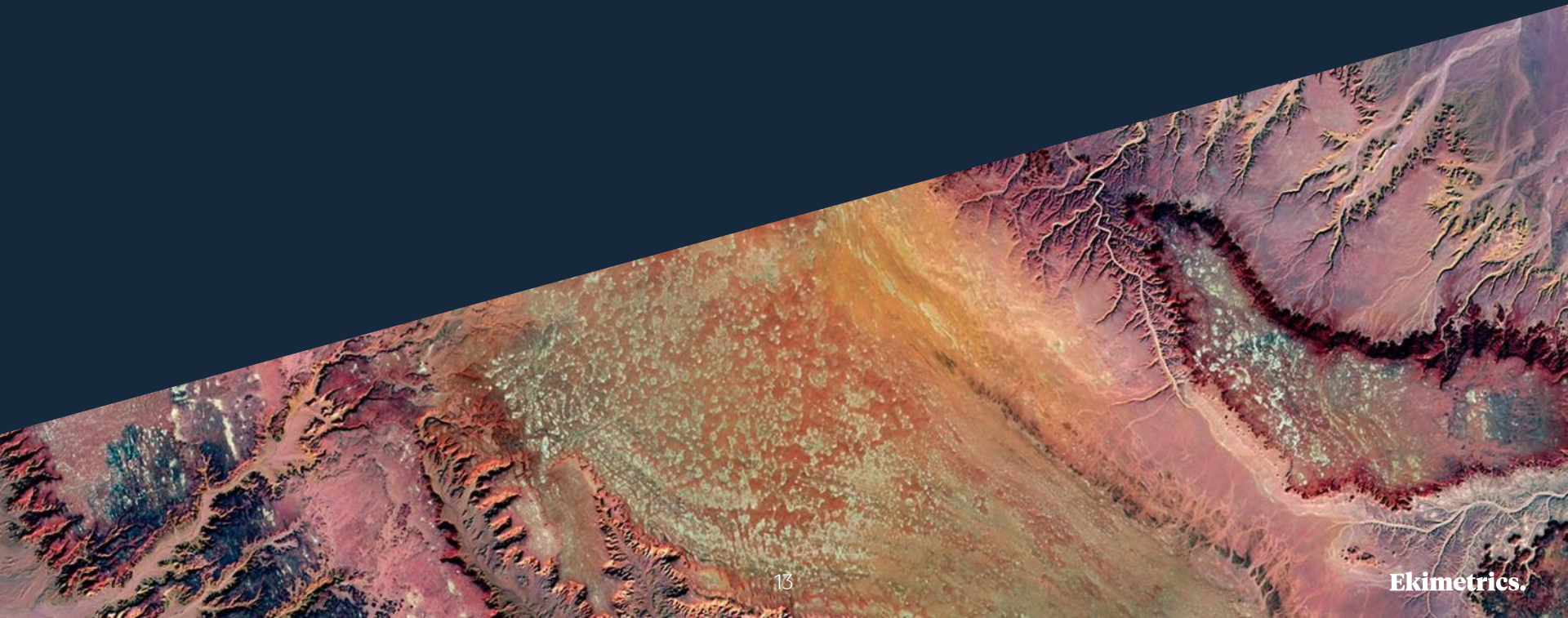


**Lola SPASOJEVIC**

*Data Science Consultant*

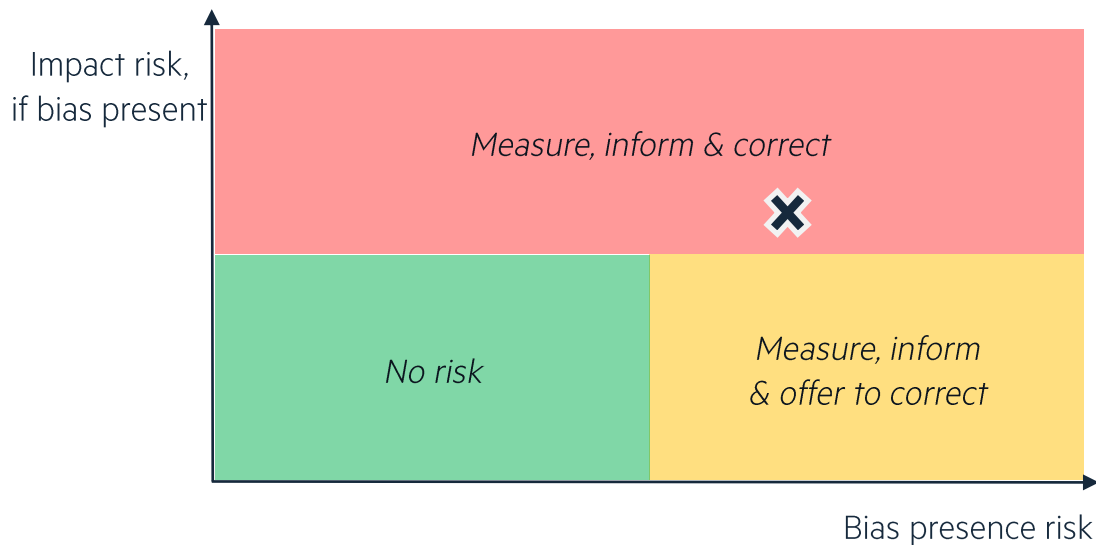


# Fairness in HR



# Fairness and Responsible AI should be at the heart of HR solutions

## Action matrix with regards to the risk of presence of bias



HR **potential risks** if the presence of bias is confirmed and not mitigated :



Discrimination



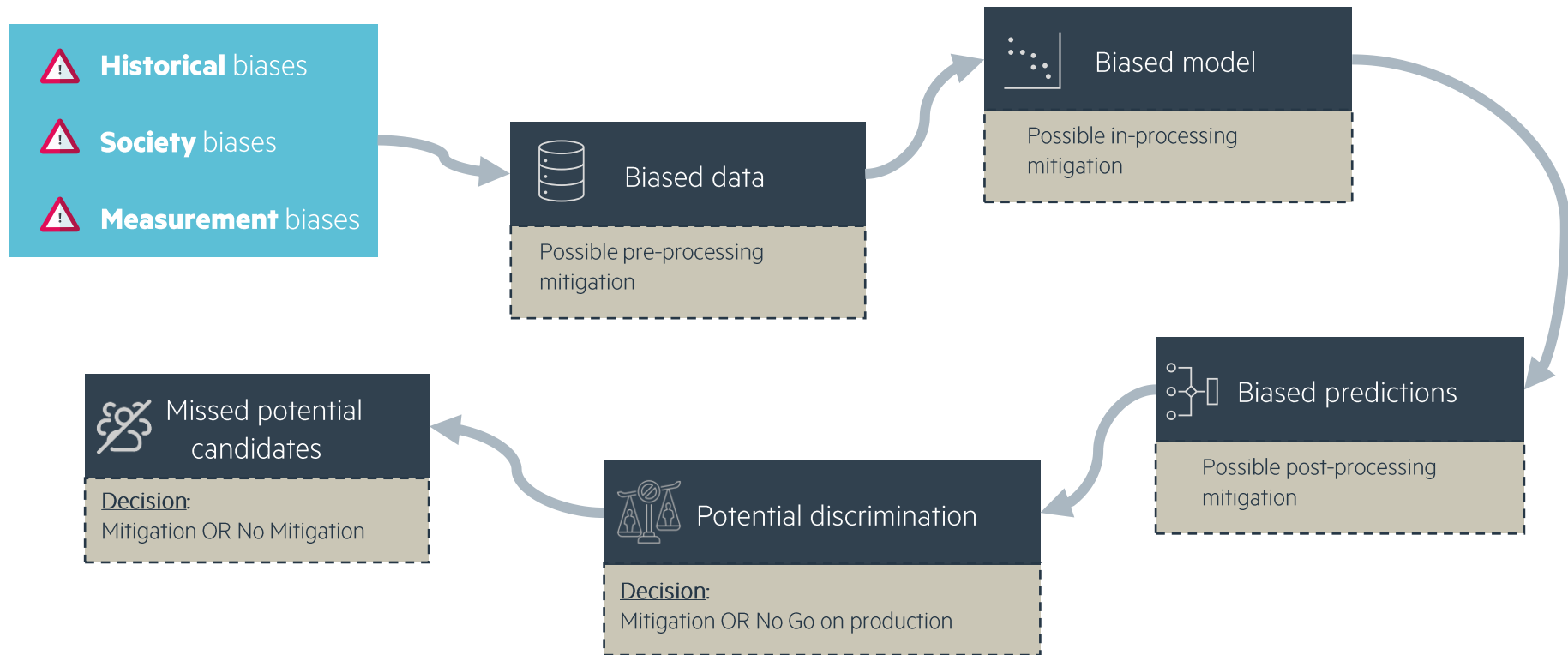
Non-targeted potential candidates



Damage of image and reputation

# Origine of biases and mitigation options

## HR – a sector particularly exposed to biases





# Studying for biases in data to increase model performance and limit reputation risks and regulatory infringements

## Identification of Bias

Checklist, Exploratory Analysis, Bias Metrics to identify **cognitive biases** and **machine learning biases** (historical, representation, measurement biases).

Having transparent and unbiased data processing capabilities and algorithms are a prerequisite to enable adoption at large.

## Mitigation of Bias



### Pre-processing

techniques to correct a biased dataset while keeping the original labels of observations (Reweighting).



### In-processing

techniques to regularize the model while preserving good accuracy (Prejudice Remover, Adversarial Debiasing).



### Post-processing

techniques to ensure that the final predictions respect fairness metrics (Equalized Odds). Model interpretation (Shapley values).

## Business Gains

Generate **short-term gains** due to a higher efficiency and accuracy of the model : customer characteristics are better considered and addressed, and no potential customers are excluded.

Generate **long-term gains** due to limitation of the risk of damage to image and reputation. They must especially be enforced when the AI is in direct contact with the consumer.

**We believe fairness and transparency of AI generate value**

An aerial photograph of a lush, green landscape featuring terraced hills and winding paths. The terraces are carved into the slopes, creating a series of horizontal green bands. The paths are narrow and light-colored, snaking through the verdant fields. The overall scene is a vibrant display of natural beauty and agricultural land use.

**Thank you**

**Ekimetrics.**