Centrale - Essec Tech Challenge

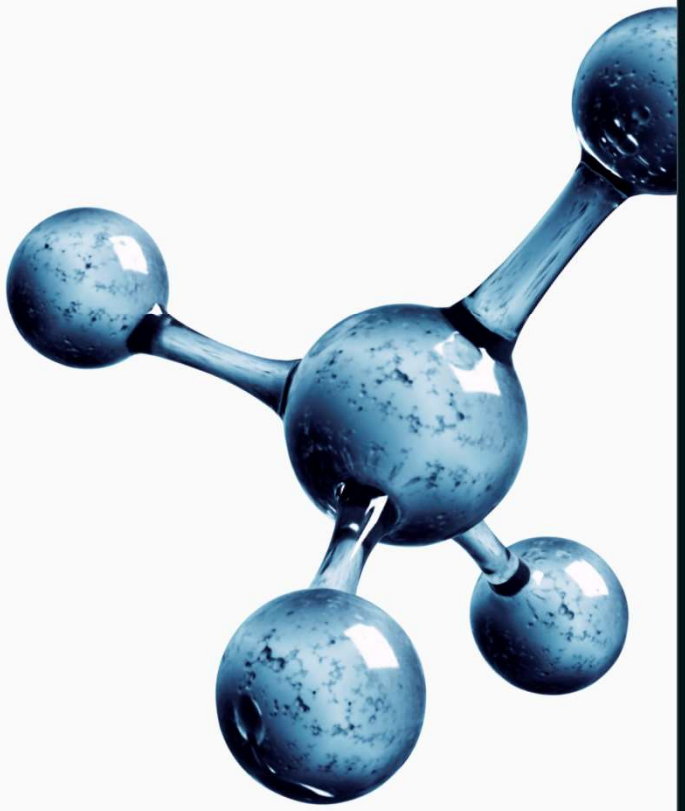
How Data & AI can help detect Methane emissions

Mai, 2023

Agenda

Day	Time	Activity
Friday 12 May *ESSEC Campus*	16h30-17h30	Tech challenge presentation and Q&A
Week-end / Monday	N.A	Team work – Including coaches support
Tuesday 16 May *McKinsey XP Studio*	18h-18h30	Welcome and introduction
	18h15-20h	Team presentations – 9 x 10
	20h-20h30	McKinsey approach to Methane emissions
	20h30	Challenge results and award sharing

CleanR

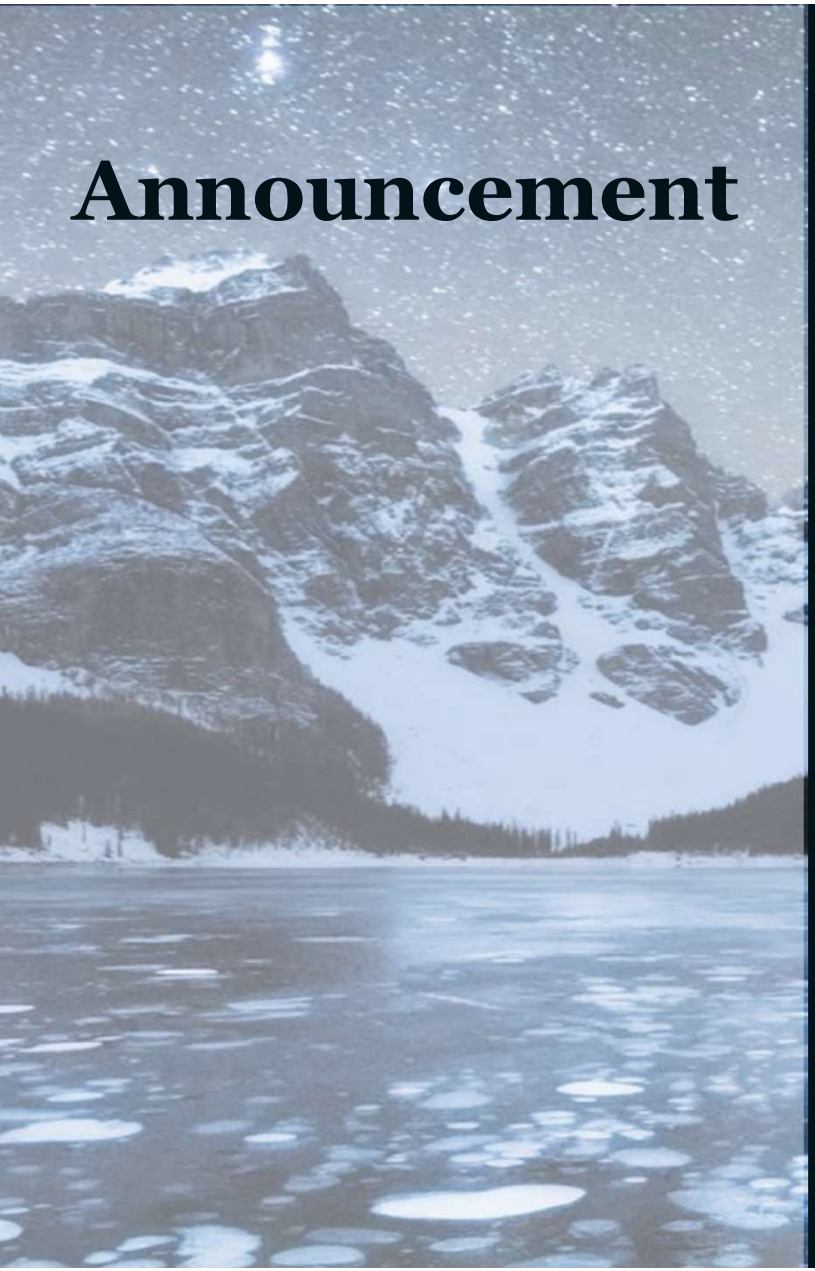


At CleanR, we're a fast-growing **start-up specialized in Methane emissions reporting**. Our founders team met for the first time in 2020 in Geneva. Today, we count already 50 team members.

Our mission is to help diminish Methane emissions by providing a clear method for MRV: **monitoring, reporting and verification**.

Three ingredients are crucial to our work: **our talented people, satellite images and deep learning!**

CleanR CoE and Co-founder



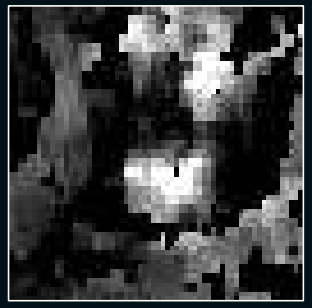
Announcement

We are hiring a new data science team to help us **localize methane leaks in the atmosphere.**

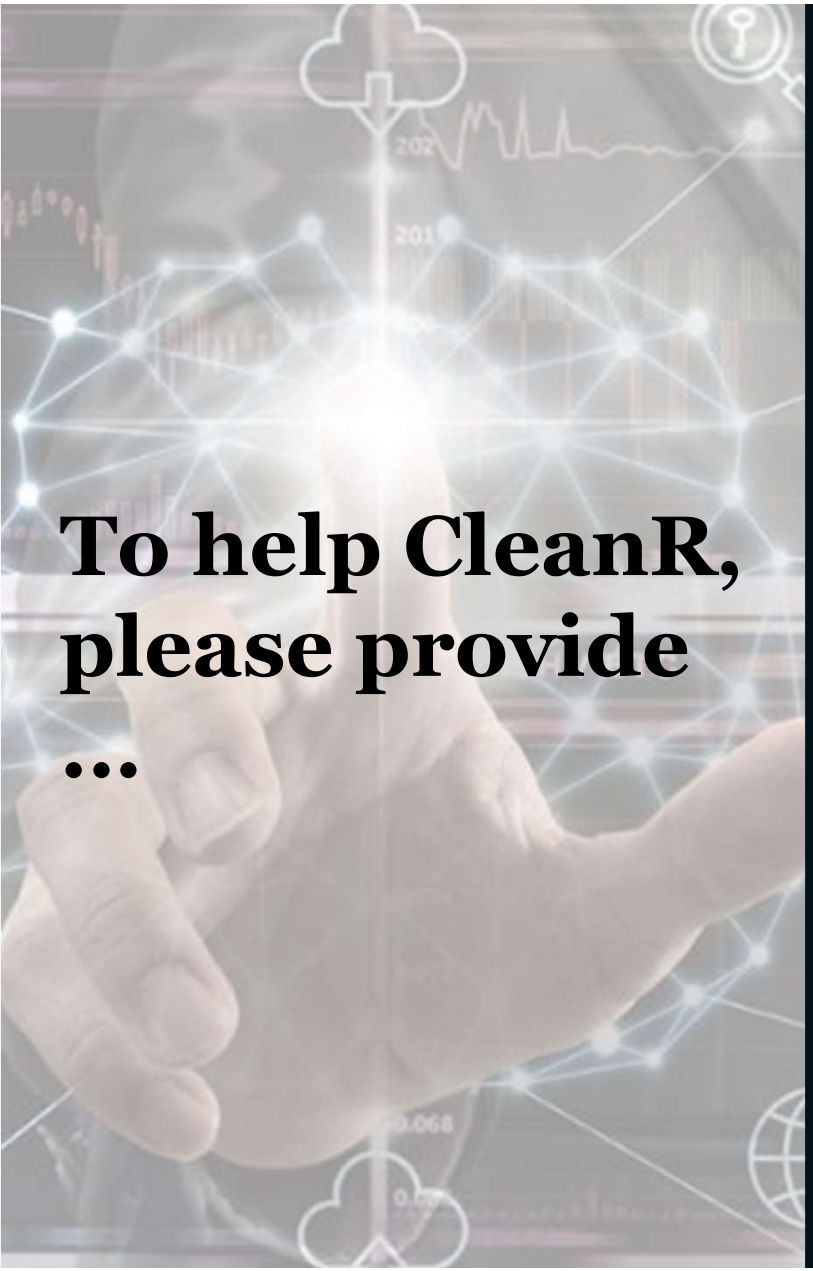
We have already gathered **satellite images** [data set – 64 x 64 images in greyscale] of different locations, and we need to identify **whether each location contains a methane plume or not**.

We also want the team to help us find use cases where this model can be used to drive positive impact.

CleanR Chief Analytics Officer



Example of satellite image with a plume of methane



To help CleanR, please provide …

Predicted labels for the test set [csv file]

Model code [Github link or zip file]

Code of your web app including at least 2 features:

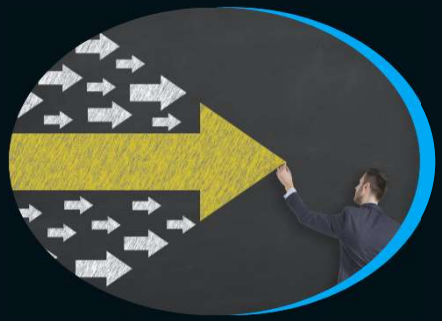
- Uploading satellite images
- Code execution to determine whether it contains plumes of methane

Pitch presentation [PPT – 10 mns]

- **Scientific approach**
- **Web App demo. If you didn't develop a web app, you can present a mock-up instead.**
- **How are you going to use your app to drive positive impact ?**

/!\ ***DO NOT change images names***

CleanR mindset



THINK BIG and start small**!**

BE CREATIVE!

BE INCLUSIVE!

HAVE FUN!

Grading criteria

Type	Axis	Criteria
Tech	Modeling	Model performance
		Scientific approach quality and depth
		Code quality (typing, docstring, comments, code clarity)
	App	Did the team build an MVP (minimum viable product) ?
		Creativity
		User experience (ergonomy, ease of use for standard user)
Business	Pitch	The pitch was structured, impact driven and dynamic
	Business model	Did the team understand the business aspect of methane emissions ?
		Relevance of use cases to drive positive impact with the web app ?
		Business model elements

Teams and Coaches

Team #	Coach data
1	Sophie Brosse, sophie_brosse@mckinsey.com
2	Mathilde Lavacquery, mathilde_lavacquery@mckinsey.com
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