Good morning!

Welcome to the Data Bootcamp powered by Hi! PARIS

We start at 9am.

What?

When and where.Why.Who?

HEC PARIS
INSTITUT POLYTECHNIQUE DE PARIS
HI! PARIS
PARIS ARTIFICIAL INTELLIGENCE FOR SOCIETY

Data Boot Camp 2025

Summer preparatory 5-day course on Python, Artificial Intelligence and Data Science

FRANCE 2030

Data Boot Camp 2025

Powered by Hi! PARIS

What is it about?

The Hi! PARIS Data Boot Camp is designed **for students interested in Data Science, Python Programming** and the **applications of AI to real use cases**.

Beginners in AI and Python Programming **are more than welcome to participate.**

The Data Boot Camp was created as a Data Science awareness program: there are **no prerequisites** to attend.

This project has benefited from a government grant managed by the ANR under France 2030 with the reference "ANR-22-CMAS-0002".

Lead a 5-days End-to-End Data science journey to successfully carry out your mission

Business understanding

- Understand the business case, stakes and challenges
- Define a strategy and its implementation
- Identify key features and components to monitor energy building consumption

Data preparation

- Discover a project data set and identify key challenges
- Experiment high quality data vs poor quality data
- Clean and rebuild the data set to serve the business strategy

Preparation exploration & viz

- Manipulate data through Data Science techniques
- Identify ways to make data talk and answer business vision
- Industrialize a monitoring performance dashboard

Model building and optimization

- Define, build and test models
- Optimize your model to be as much accurate you can
- Deep dive into predictive analysis to serve your B-Case

Scale up strategy and deployment

- Identify industrialization stakes, complexity and feasibility
- Work on a scale up strategy to propose to your client
- Explore new ways of working with data

YOUR DATA BOOTCAMP PROGRAM

		Beg.	Int.	Beg.	Int.	Beg.	Int.	Beg.	Int.	Beg.	Int.
9h-10h	9am-10am	Kickoff		How to manage an End-To-End project ?		Data Viz II	Machine Learning I	Machine Learning I	Deep Learning	End project	
10h15-11h15	10:15am - 11:15am	Data Science Awareness							Machine Learning II		
11h30-12h30	11:30am-12:30pm	Python Beginner I	Python Intermediate	Data Viz		Machine Learning I	Machine Learning II	Multi Agent			
Lunch	Lunch	Lunch		Lunch		Lunch		Lunch		Lunch	
13h30-14h30	1:30pm-2:30pm	Python Beginner II	Python Intermediate	Data viz I		Machine Learning II	Machine Learning I	Machine Learning II	Deep Learning	End project	
14h45-15h45	2:45pm-3:45pm	Data Cleaning, Discovery, pandas							Explanability	Jury and go further	
16h-17h	4pm:5pm					Text-To-Speech Presentation		Ethics		Closing	
	5pm-										

Theoretical	Pratical	Management	Ceremony	AI Concept

When and where?

Why. Who?

Data Boot Camp 2025

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First session

Aug. 18th – 22nd

100% online

From 9:00am to 5:00pm
(9:00 am to 5:30 pm the Thursday)

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Why?

Who?

ULTIMATELY, WHY ARE WE HERE TODAY?

Define what Data Science is

Live the life of a Data Scientist

Prepare the start of a new academic year while having some fun

Get our hands dirty by diving into Data

Trigger your inner passion for Data science

"Touch to code"

Learning by doing

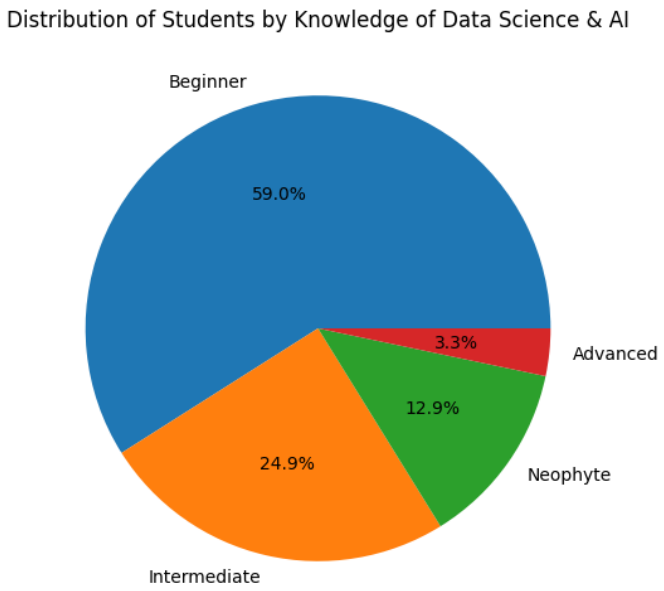
Manage a Data science Business use case

Who?

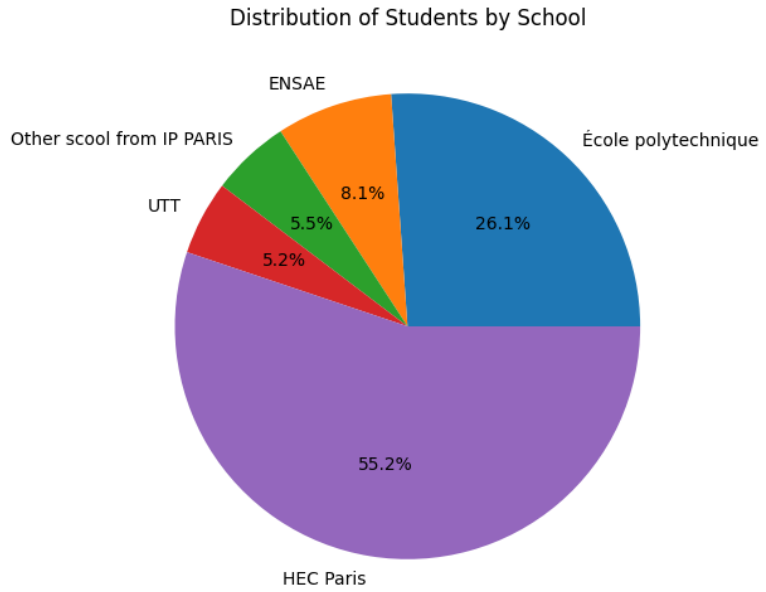
WE ARE SO HAPPY TO WELCOME YOU!

+3300 inscriptions for the Data Bootcamp for this week!

Knowledge of data science & AI



Which School do you belong to?



Presentation of the Hi! PARIS interdisciplinary center in AI & Data Science

Hi! PARIS' ambition is to become a world-class center in AI and Data analytics competing with the very best institutions

Breakthrough multidisciplinary research

Need for frontier research going from fundamental research on **methods for AI** and data analytics to **business applications** across all sectors and **implications for society**

Breakthrough for the higher education

Exponential growth of data available and AI capability implies a **massive need** in **all sectors of the economy** for graduates with an expertise in both (data) science and management

Breakthrough ecosystem for innovation

The IP Paris – HEC Paris – Inria Alliance is an opportunity: complementary human capital and incubation facilities

Thanks to the exceptional support 5 **corporate donors**

RESEARCH

+250

Faculty members in AI & Data Science

13

ERC in AI (active in 2023)

+430

Articles in top-tier journals and conferences in AI

EDUCATION

+250

PhD students in AI & Data Science

INSTITUT POLYTECHNIQUE DE PARIS

#1 In France

#12 Worldwide

Graduate Employability (QS 2022)

HEC PARIS

#1 In Europe & Worldwide (QS 2023)

#1 Executive Education Worldwide (FT 2023)

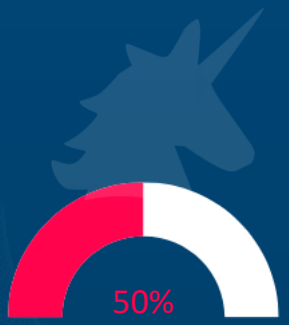
X x HEC PARIS

#1 In Europe

#3 Worldwide

X-HEC MSc Data Science for Business (QS 2023)

INNOVATION



of the French unicorn-founders are alumn from our institutions

171

Startups in AI are founded, incubated, or accelerated within our entrepreneurial ecosystem

SOCIETY

Non profit

HEC PARIS

&

Public status

INSTITUT POLYTECHNIQUE DE PARIS

X ENSTA ENSAE TELECOM Paris TELECOM SudParis

Inria cnrs École des Ponts ParisTech utt TROYES

Expertise in equal opportunity actions, particularly targeting high school pupils

The Use Case

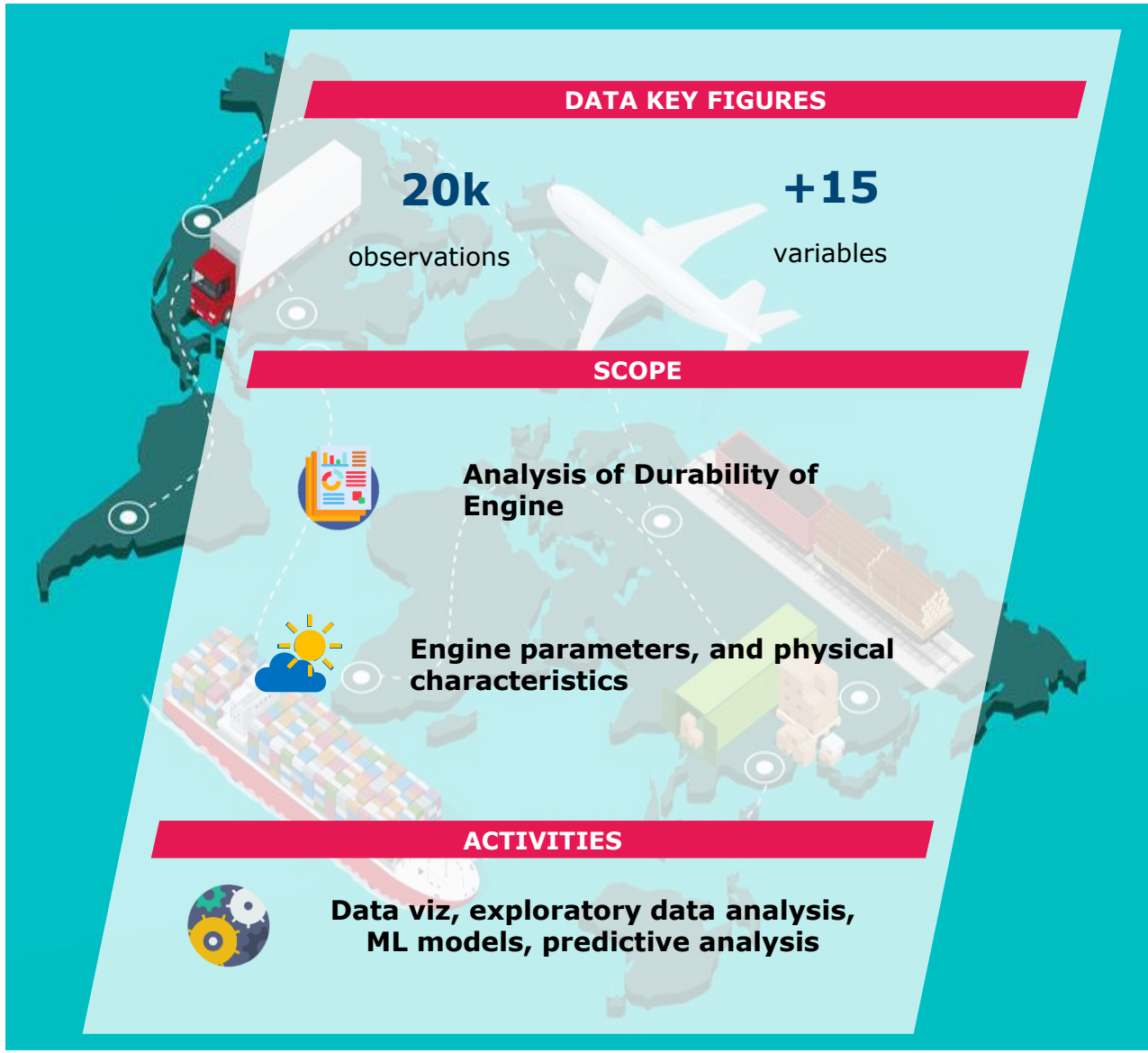
CONTEXT

Rocket propulsion is at the heart of space exploration, enabling humanity to reach beyond Earth and explore the universe. In this Data Boot Camp, we'll dive into a dataset focused on NASA rocket engines, offering a detailed look into their design, performance, and evolution over time.

These engines are more than just feats of engineering — they reflect decades of research, innovation, and problem-solving. From breakthroughs in fuel technology to the challenges of deep space missions, our analysis will reveal how engineering decisions and scientific advances shape rocket performance.

As you work with this dataset, you will apply data science techniques to uncover patterns, predict engine durability, and explore the factors that contribute to successful space missions.

This exercise will sharpen your technical skills and give you a deeper understanding of the complex dynamics behind rocket propulsion — a crucial step toward the future of space exploration.

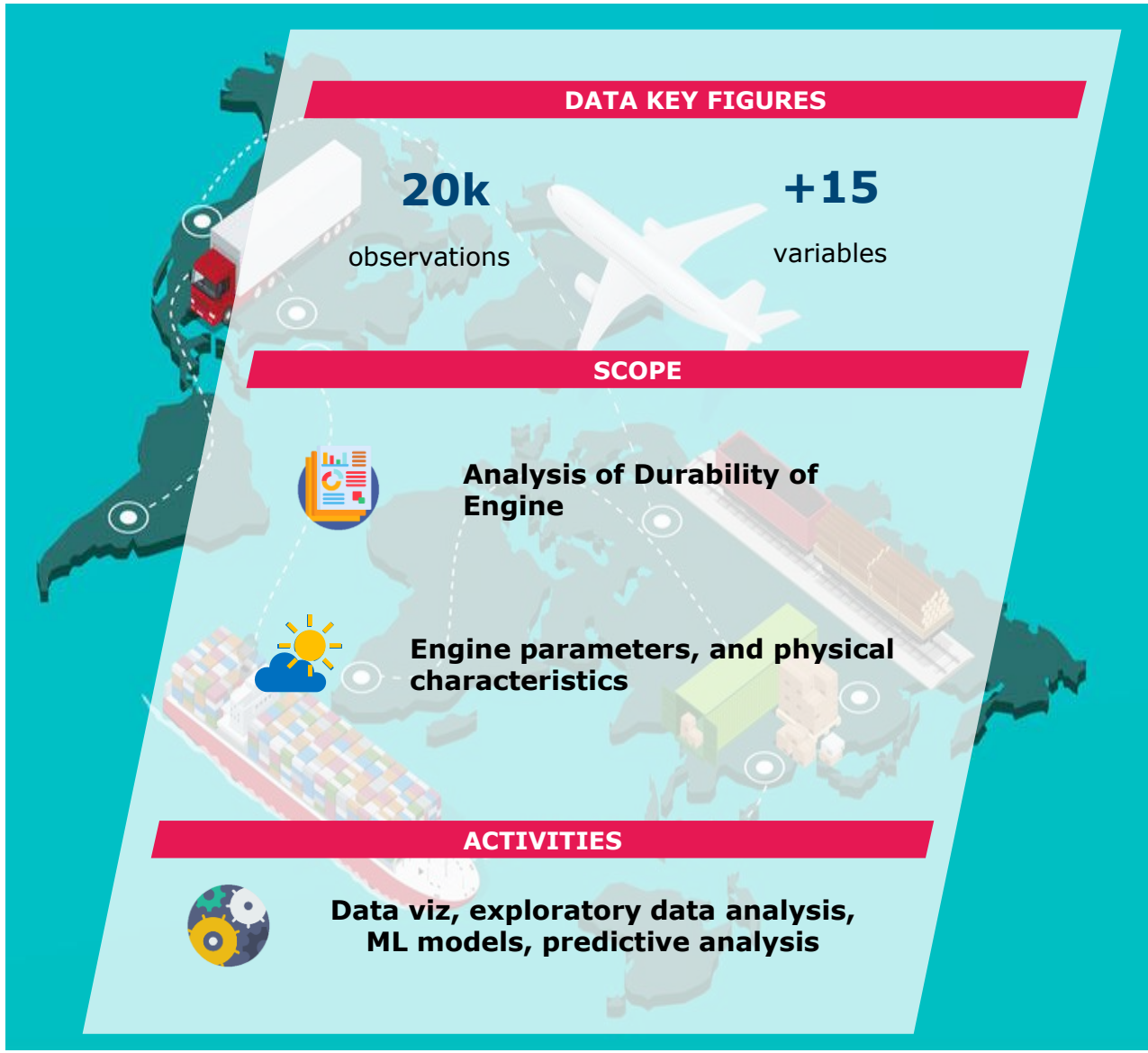


YOUR ROLE

You work for a national space agency in a Data Science team.

Your task is to collaborate with NASA engineers and aerospace research teams, offering insights that will enable them to analyze rocket engine performance, identify engineering trends, and devise strategies to optimize propulsion systems for future missions.

Within a 1-week timeframe, you are tasked with formulating comprehensive recommendations for your organization, backed by data-driven analysis, predictive modeling, and actionable engineering insights.



DELIVERABLES - WHAT IS EXPECTED FROM YOU?

During the presentation session you will be evaluated by a jury.
The notation will take into consideration the following aspects:

Aspects

- Performance of the algorithm
- Quality of the presentation: scientific approach, clarity of the results presented
- Creativity of the proposed analysis
- Relevance of the answers to the questions
- Relevance of the insights selected – balance between exhaustivity and synthesis

Scientific Approach : 1 PowerPoint of 4 to 6 slides with :

- 1 team presentation slide (who you are, school, team organization)
- 1-2 slides to describe **your approach** following the path: Data preparation >> Preparation exploration & viz >> Model building and optimization.
- 1 slide to justify your content/scientific approach: **decision made**, model chosen, optimization realized.
- 1-2 slides to present your analysis and **your conclusions.**

The final evaluation does not give rights to ECTS credits --- Presentation must be readable in 4 minutes

EVALUATION CRITERIA

How to get the certificate by the end of the week?

1) **Friday 12:30 PM:** Send us the completed notebooks for Tuesday, Wednesday & Thursday – 1 per person

2) **Friday 2:30PM**: Send us the Scientific Approach - 1 per group

3) Attend more than **80% of classes**

3 honorary prizes will be awarded:

- Best model result
- Best scientific approach
- Best progression

No stress – don't forget to have fun!

Working modalities

SOME OTHER USEFUL Q&As

• How do I raise an issue?	• Discord, #python-help or #data-science-help or DM to a team member in Discord or Zoom
• What if I have a Zoom-Discord-Hfactory problem?	• Discord, #difficulties-hfactory-discord-zoom or DM to a team member in Discord or Zoom
• Should I have come already knowing how to code?	• NO don't worry you will be guided through each exercise
• Will I have access to the presentations?	• YES, right after the lesson
• Is it ok to ask questions during presentations?	• YEEEEES please, open the microphone, put it in the chat or raise your hand but **don't keep it for yourself!**

Your tools

: to follow all theoretical classes

- ✓ All classes are remotely accessible through Zoom
- ✓ Ask questions, or react on certain topics directly through the platform

all content and libraries will be accessible through the HFactory.

for group work and practical courses

- ✓ You can ask technical / python questions directly on the dedicated channels
- ✓ Work in groups on voice chat rooms. We can also help you directly via these groups

Before we start – your check list!

- ❑ I have access to ZOOM and can follow classes
- ❑ I can access to Discord
- ❑ I can connect to the HFactory

Any questions?

Enjoy!

Python Beginner at 11:15 am