



KU LEUVEN

LEUVEN STATISTICS
RESEARCH CENTRE



KU Leuven

DATATHON 2024

Kick-Off

Made possible by



WELCOME STUDENTS!

We are thrilled to welcome all of our talented students who have accepted the challenge to torture the data until it confesses!

Without students, no **Datathon**
@KULeuven!

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WELCOME SPONSORS!

We are equally excited to welcome our **generous sponsors!**

Without sponsors, no datathon @ KULeuven! (or it would be one without food, drinks and prizes...). Take this moment to introduce yourselves.

RISK
CONCILE



RiskConcile

Fast-growing FinTech based in the centre of Leuven, looking for talent !

RISK
CONCILE



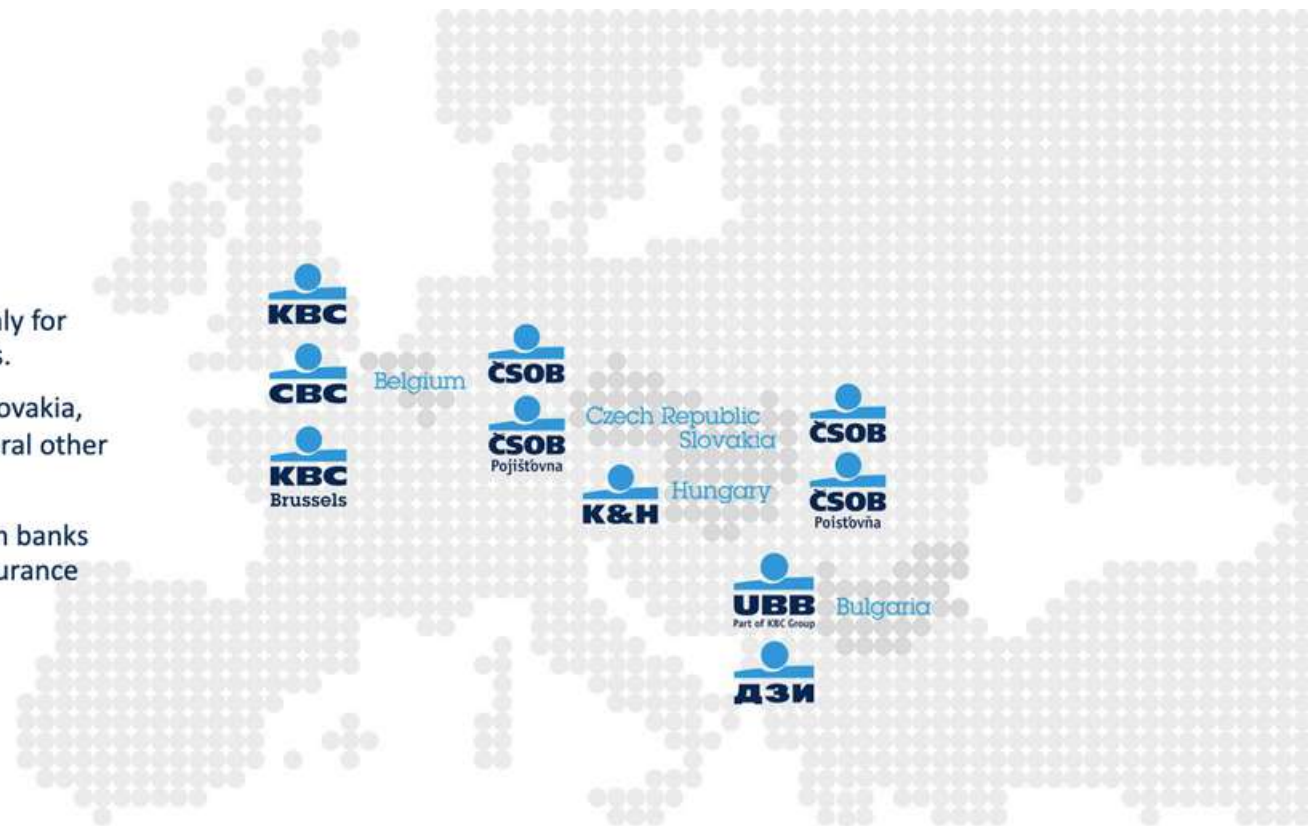
KBC @ KU Leuven Datathon & Jobfair

15th February 2024



KBC Group

- Integrated bank-insurance group, catering mainly for retail, private banking, SME and mid-cap clients.
- Core markets – Belgium, the Czech Republic, Slovakia, Hungary and Bulgaria. Limited presence in several other countries.
- Formed in 1998 after the merger of two Belgian banks (Kredietbank and CERA Bank) and a Belgian insurance company (ABB Insurance).
- Clients: 13 million
- Employees: 41 000
- Bank branches: 1200





 **Driven by data**
Powered by *ADAM*

Internal

Differently THE NEXT LEVEL

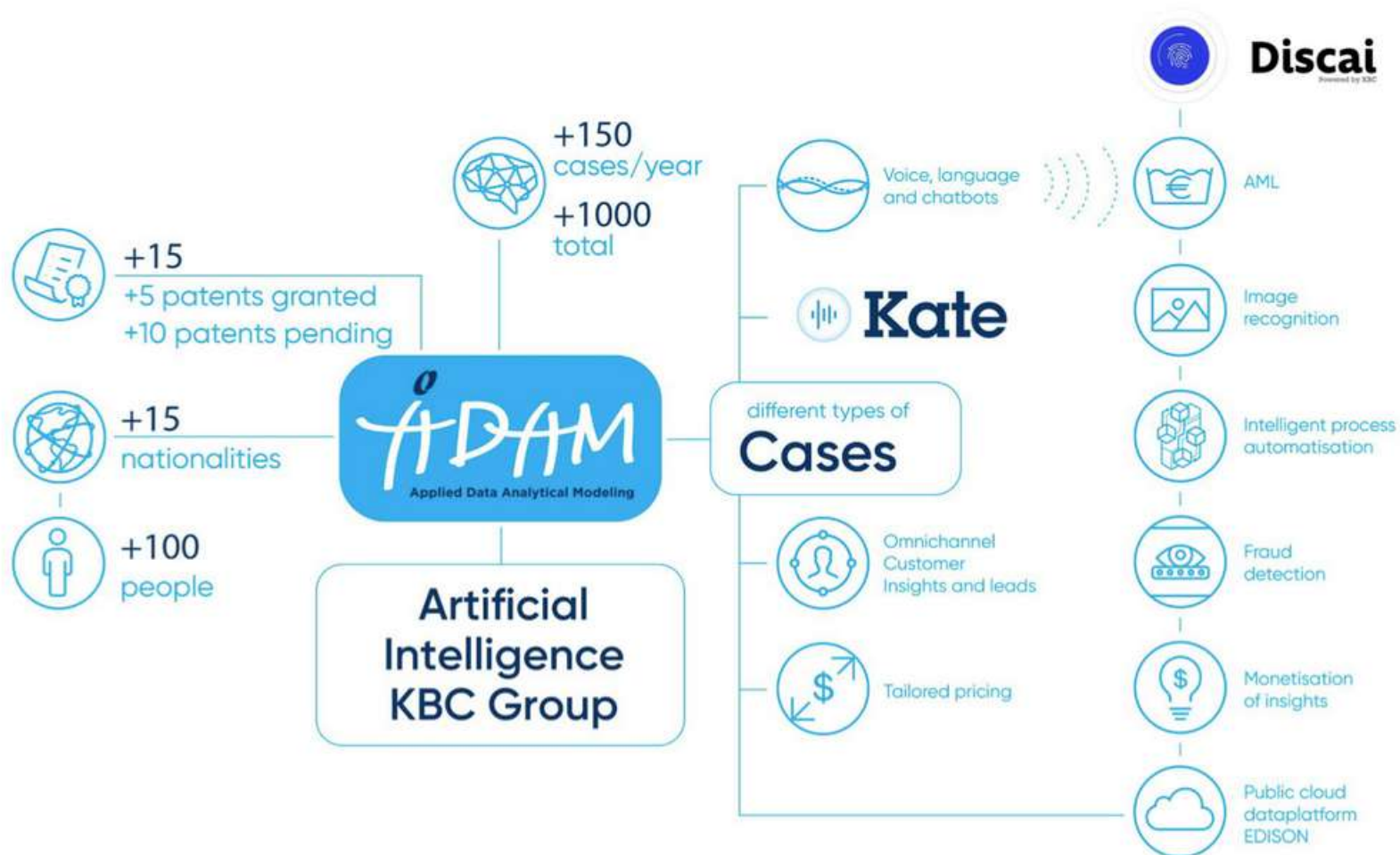
“Data is the new electricity” -
Johan Thijs, CEO KBC Group



 Moving forward
together.

Internal

Differently THE NEXT LEVEL



Multidisciplinary and multicultural team



ADAM BE Team

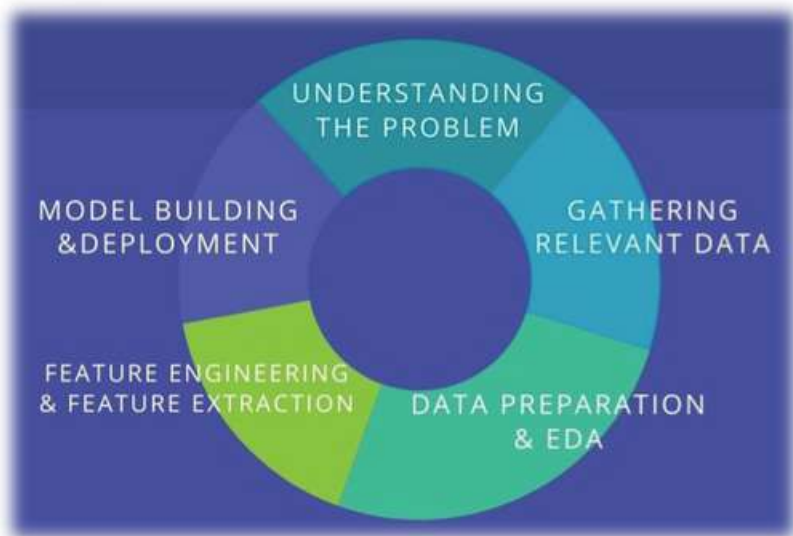


ADAM Bootcamp 2023 (Prague)



ADAM BE Team

Being a Data Scientist in ADAM



Full data science project lifecycle

A data scientist takes a **business challenge** and translates that into an **AI solution** using the variety of data we have in KBC. You don't just sit behind your computer but have plenty of **interactions** and inspiring **discussions** with your colleagues and stakeholders.

What you build brings **real value** to the company

You **stay up-to-date** with cutting edge techniques

You work on a **variety** of problems

Internal

Differently **THE NEXT LEVEL**

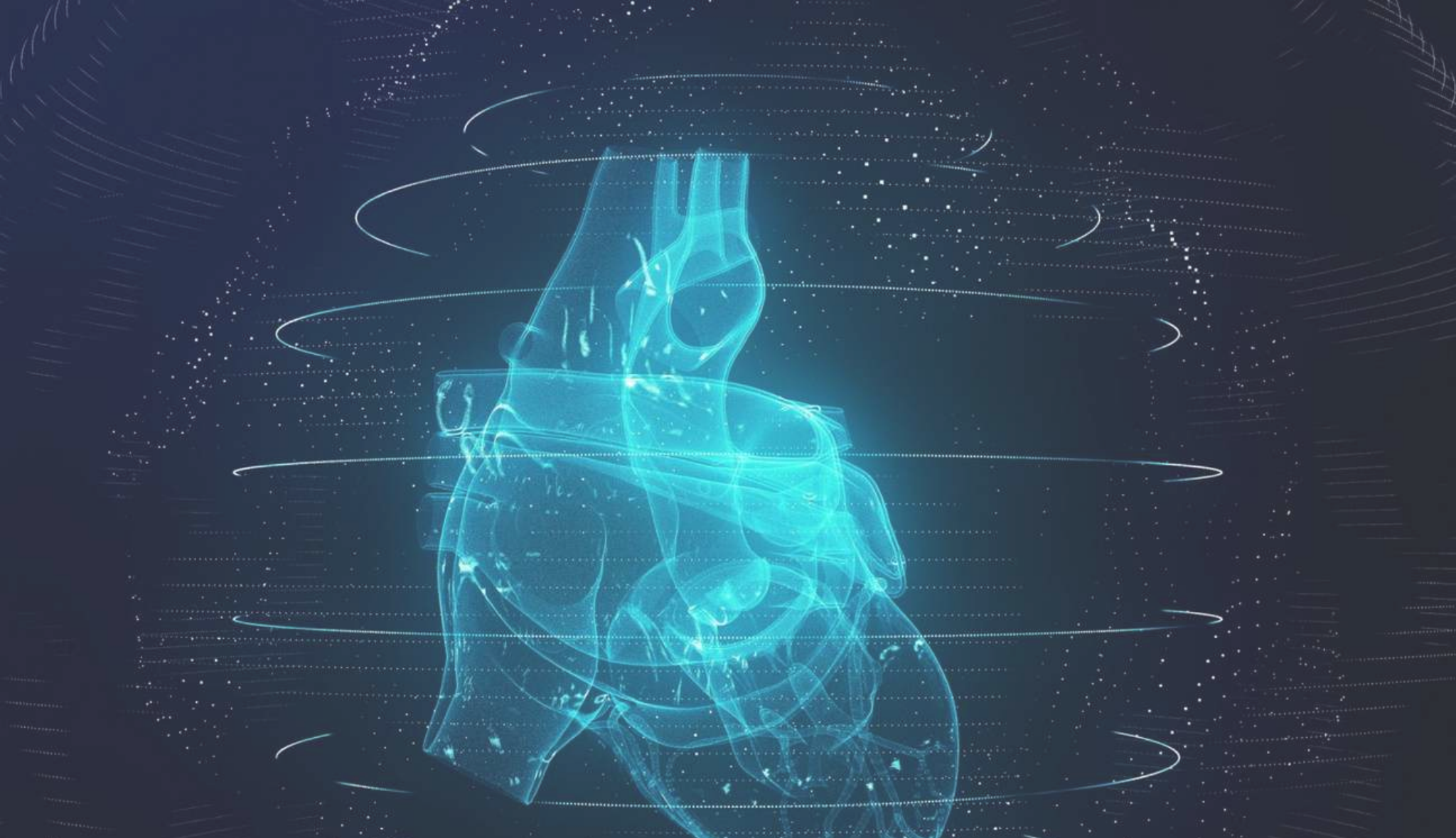
Expertise domains in ADAM



Don't
be shy.



Moving forward
together.



FROM BYSTANDER TO HERO



10%

Decrease in chance of survival for every minute that passes

8-15 min.

Between the 112 call and the arrival of the ambulance

30

cardiac arrests in Belgium each day (on average)

< 10%

survive after suffering a cardiac arrest

> 80%

of Belgians do not help during cardiac arrests. What about you?



See the video at: <https://youtu.be/3vUP3YVTj2o>

MISSION

Optimize placement of live-saving AED devices across Belgium leveraging extensive geolocation data of heart attacks to improve the emergency response and **save lives**



Be a hero!



FIRST AID APP

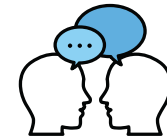
From a nosebleed to a cardiac arrest, this application tells you what to do in case of an emergency!

First Aid App Red Cross BE



FIRST AID TRAINING

The Red Cross offers First Aid courses all over Belgium for free.



SPREAD THE WORD

Inform others about what you have learned. It might save your life!



LET'S GET PRACTICAL

Timing is key to a succesful datathon

MARK YOUR CALENDARS

February 21

14h00 - DEADLINE

- **Who?** Team captain
- **Where?** Google Drive (Shared in due time)
- **What?** Solution (can be in any format),
no data

The earlier, the better!!

16h00 - Voucher Pick-Up

16h15 - Start Pitching

19h00 - Award Ceremony

19h30-21h00 - Networking



MARK YOUR CALENDARS

February 21

14h00 - DEADLINE

15h45-16h - Voucher Pick-Up

- **Team Captain** picks up envelope with info about pitches, catering and timing
 - **Drinks** are served 16h15-21h00 + sponsors!
 - **Catering** between 17h30 and 18h45 in QDV
-

16h15 - Start Pitching

19h00 - Award Ceremony

19h30-21h00 - Networking



MARK YOUR CALENDARS

February 21

14h00 - DEADLINE

16h00 - Voucher Pick-Up

16h15 - Start Pitching

- Teams **pitching**
- Team captain will be informed beforehand where and when.

Ground rules:

1. Use your **own laptop**.
 2. There are **HDMI** cables (but no HDMI Thunderbolt adaptors)
 3. Be at least **5 minutes earlier**
 4. Pitching **behind closed doors**
 5. Time limited to **5 minutes**
 6. Jury Q&A of 5 minutes after pitch
 7. Teams are graded based on modeling, pitching, and visualization.
-

19h00 - Award Ceremony

19h30-21h00 - Networking



MARK YOUR CALENDARS

February 21

14h00 - DEADLINE

16h00 - Voucher Pick-Up

16h15 - Start Pitching

19h00 - Award Ceremony

- Each member of a winning team receives a CoolBlue voucher
- Price categories:



Best Pitch



Best Visuals



Best Model

- Pitch in front of audience that votes for 'Winner of the Datathon 2024'

19h30-21h00 - Networking



MARK YOUR CALENDARS

February 21

14h00 - DEADLINE

16h00 - Voucher Pick-Up

16h15 - Start Pitching

19h00 - Award Ceremony

19h30-21h00 - Networking

- Have a well-deserved drink at the closing reception in Quadrivium
- Discuss your ideas and work with your peers
- Network with our sponsors!



CHILL(Y) AND COOL

In order to save energy, KU Leuven has decided to shut down the heating at 17h00.

Be sure to wear your favourite sweater!

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...AAAND ACTION!

A photographer
will be present at the Datathon,
so be sure to strike a pose!

The pictures will be shared with you on
our website! That way, you can share
your experiences with friends and
family

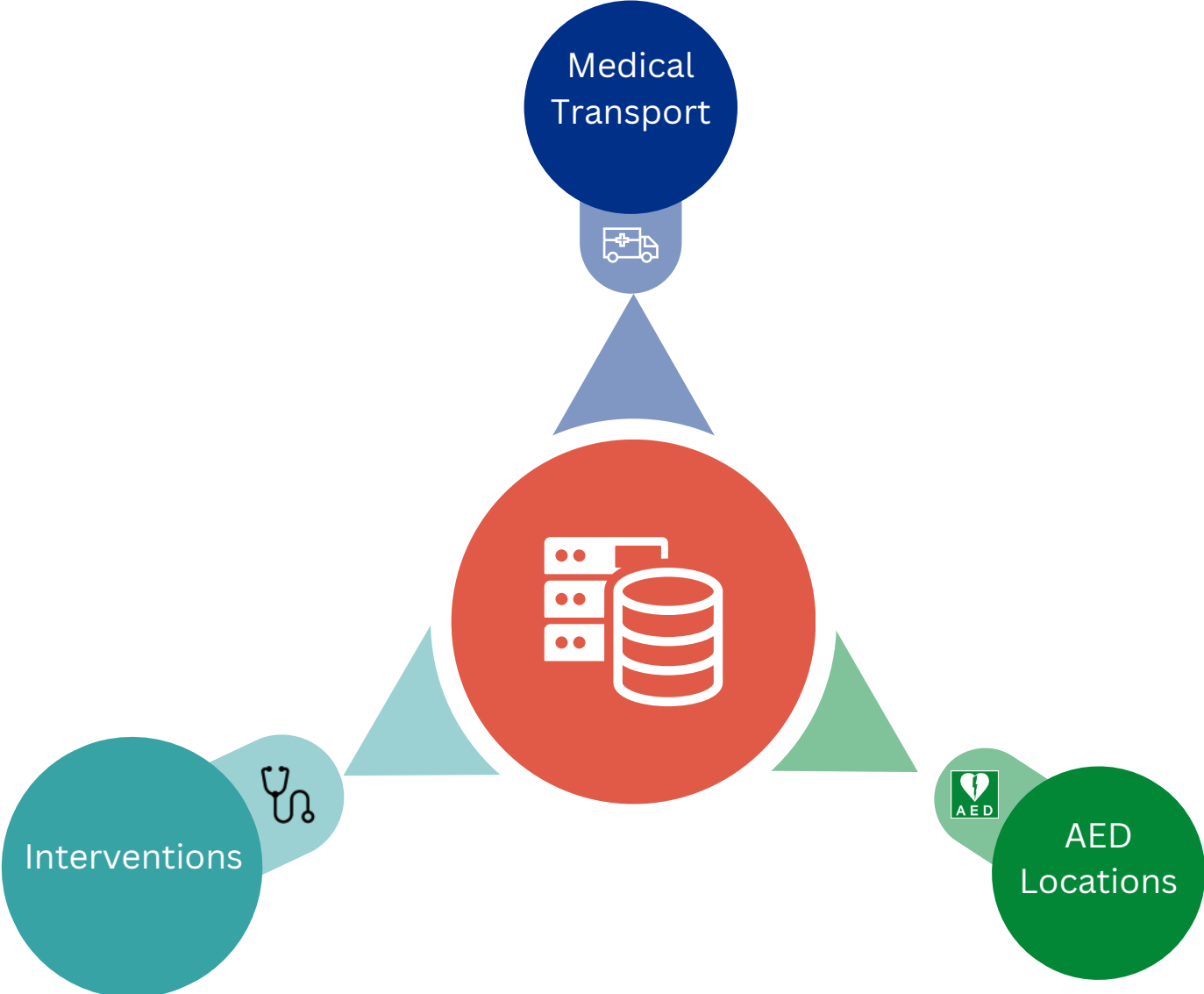
**Note: If you wish not to be
photographed, please make your
wishes known to the photographer
and/or the event organizers**



MEET THE DATA

Introducing the main features of the data set

STRUCTURE OF THE DATA



STRUCTURE OF THE DATA



MAIN DATASET

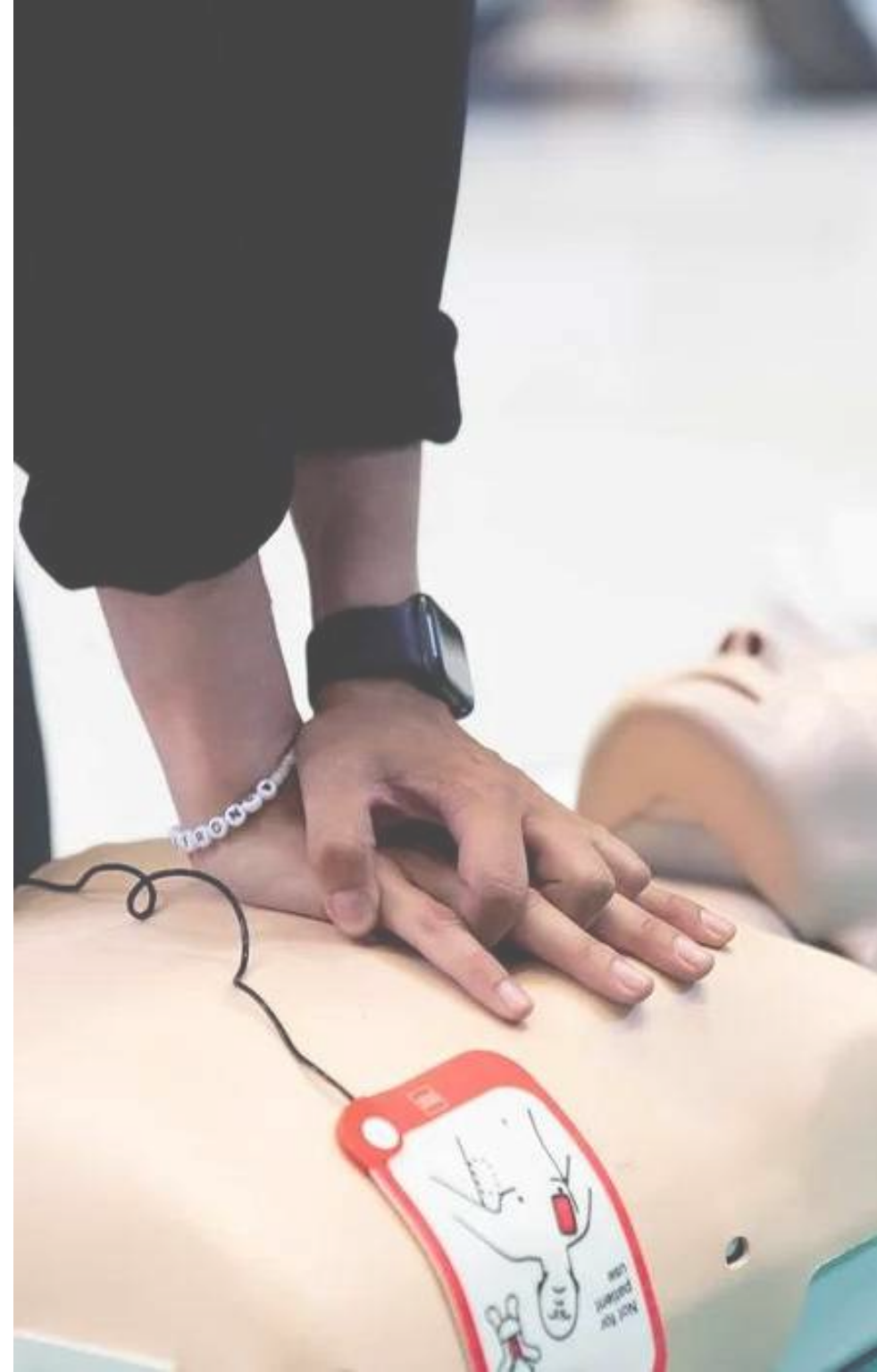
Content

The main data set comprises three primary subsets:

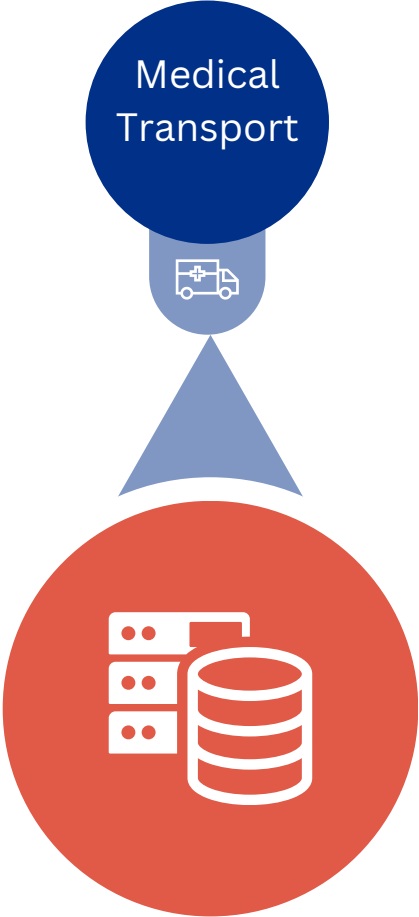
- **Medical Transport data:** Details regarding emergency response vehicles and transport logistics
- **AED Device data:** Information on AED devices
- **Medical Intervention Data:** Records of medical interventions

Details

- The data covers the entirety of Belgium.
- Identifying information has been removed.
- Data might not be clean (!)



STRUCTURE OF THE DATA



MEDICAL TRANSPORT

Content

There are three different data sets pertaining medical transport:

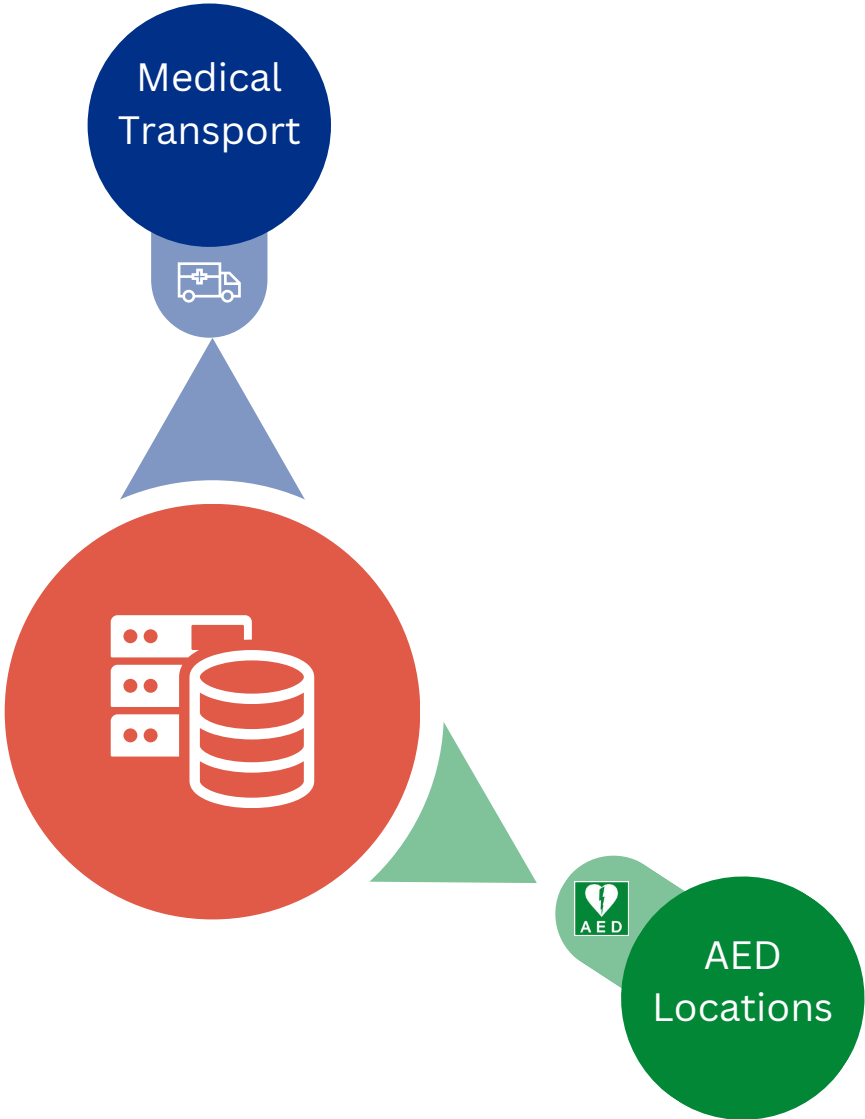
- **Ambulance data:** Two paramedics, not allowed to administer medication
- **PIT data:** One paramedic, one nurse. Nurse is allowed to administer medication.
- **Mug Data:** Nurse and emergency doctor. Often accompanied by an ambulance. Used in most severe cases

Features

Information regarding the location of the emergency vehicle, including the address and lat/lon coordinates.



STRUCTURE OF THE DATA



AED LOCATIONS

Content

The features in this data set are:

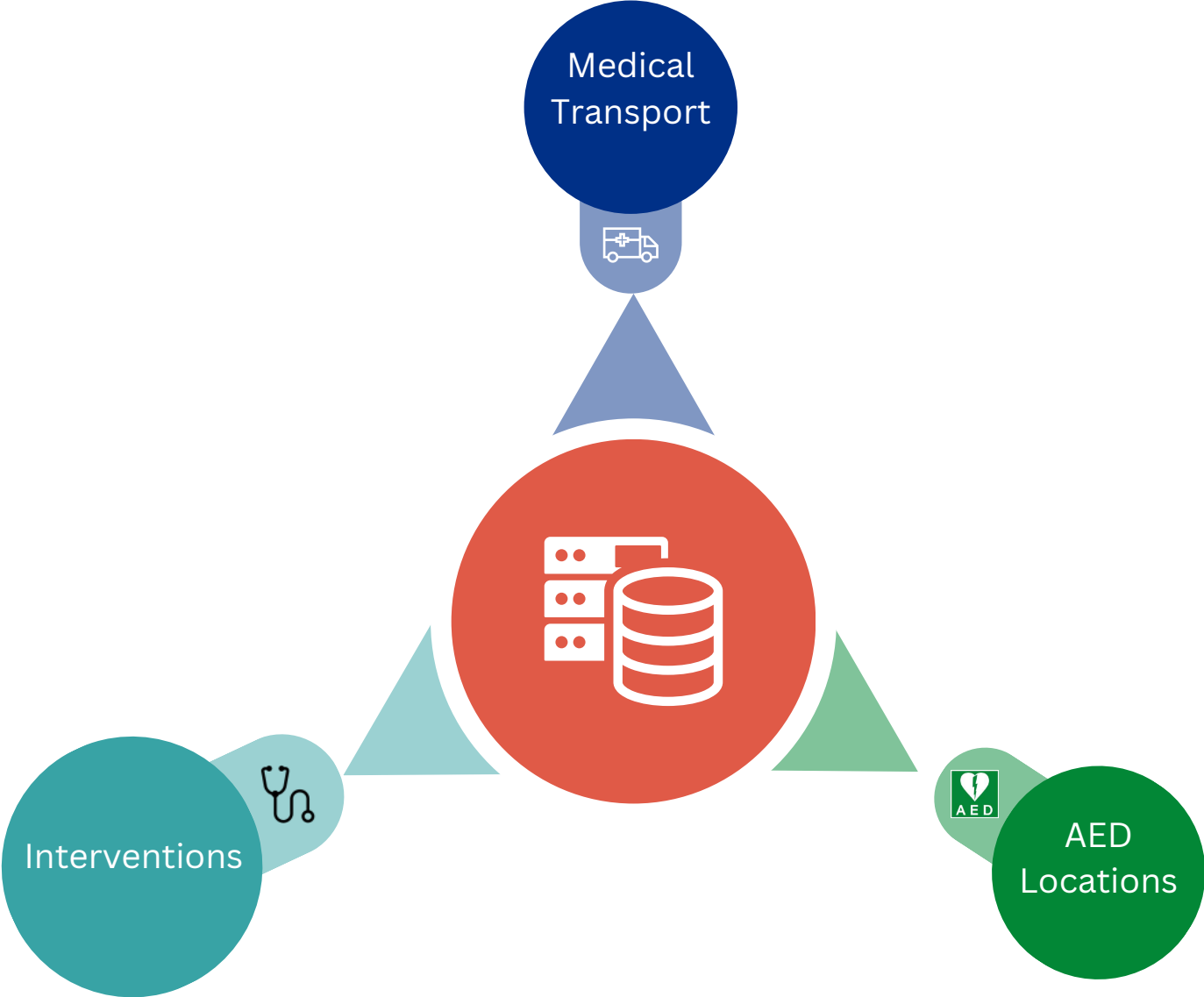
- **Address**, postal code, province
- **Type of device** (fixed, mobile)
- **Location of the device**: Brief description of where the device is located on the premises
- **Features regarding accessibility**: Private domain, availability, hours, ...

Some remarks:

- Missing values
- Information in different languages
- Inconsistencies



STRUCTURE OF THE DATA



INTERVENTIONS

Content

Multiple parquet files:

- **Large** data sets!
- Rich data set with **temporal**, **geospatial** and **text** data.
- **Not cleaned!**
- Repeated information!

Features:

- **Type** of emergency
- **Location** of emergency
- **Destination** hospital information
- **Emergency vehicle** data
- **Elapsed time** between stages



TIMESTAMPS



T0

Call answered by operator



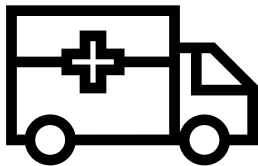
T1

Vector alarmed by operator



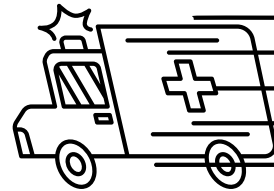
T2

Vector leaves to intervention location



T3

Vector arrives at intervention location



T4

Vector leaves to destination hospital



T5

Vector arrives at destination hospital

T6

Vector leaves at destination hospital



T7

Vector available again



TIPS & TRICKS

Helpful comments for a succesful datathon

TIPS AND TRICKS

Tooling

Choose the correct tool for the job

Consider several programming languages and packages before starting your analysis. Using the 'usual' packages is not a bad idea, but might not give you an edge over the competition

(e.g., Gephi for graph visualization, Plotly for interactive plots, ...)

Choose the platform you're going to work on wisely

Apps are appreciated

Have fun!



TIPS AND TRICKS

Tooling

Choose the correct tool for the job

Choose the platform you're going to work on wisely

Working together on the same code is hard, find a solution that fits your whole team!

(e.g., Google colab for Jupyter notebooks. Helpful for their free (but limited) GPU computation services)

Apps are appreciated

Have fun!



TIPS AND TRICKS

Tooling

Choose the correct tool for the job

Choose the platform you're going to work on wisely

Apps are appreciated

An app is not required, but appreciated. Make sure the app is clean, intuitive and works on other devices as well!

Have fun!



TIPS AND TRICKS

Tooling

Choose the correct tool for the job

Choose the platform you're going to work on wisely

Apps are appreciated

Have fun!

Remember that this is not graded! Communication is key!
... and most importantly, have fun!





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Goodluck!

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