GIVE BLOOD
SAVE LIVES.

GO-Tech Dashboard

A tool suited for blood donation campaign analysis.

wed Apr 09 2025

INDABAX CAMEROON 2025

Outline :

- Introduction
- What it is the Go-Tech dashboard ?
- Data overview and preprocecing techniques
- How it work ?
- key functionalities
- Conclusion

Introduction

In a global context where data drives all major activities, **the absence** of structured **data management** in many of our hospitals limits their ability to make informed decisions. This is especially true for blood donation campaigns, where *data analysis, interpretation, and feedback* are often overlooked despite their potential **to improve outcomes** and **save lives**.

What it is Go-Tech dashboard ?

We present an interactive and intuitive dashboard designed to help users go over key insights from raw structured blood donation data which will enable better understanding, faster decision-making, and improvement in campaign strategies.

The dashboard is particularily focus on:

- **Visualize trends in blood donation by location, time period, and donor profile.**
- **Identify high-performing and underperforming campaigns to guide strategic planning.**
- **Facilitate timely feedback to organizers and stakeholders through real-time insights using predictions.**

Data overview

The dashboard is powered by structured data extracted from spreadsheets detailing 1915 individuals who participated in blood donation campaigns in cameroon. They where observed on 40 covariates divide into logistic,demographic and health-related Informations.

Preprocecing techniques

The main work done to make the data usable in the analysis was essentialy to :

formalise the date column, adopt strategies like next value replacing or local average for date missing values.

map effectively the quater to their good arrondissement, normalise categorical missing values.

add necessary column for the analysis like Age,ville..

Drop column with more than 85% off missing values which was juged to be unnecessary like “Taille ” and “Poids”.

How it work ?

The dash board is divide into trhee parts.

The side-bar :

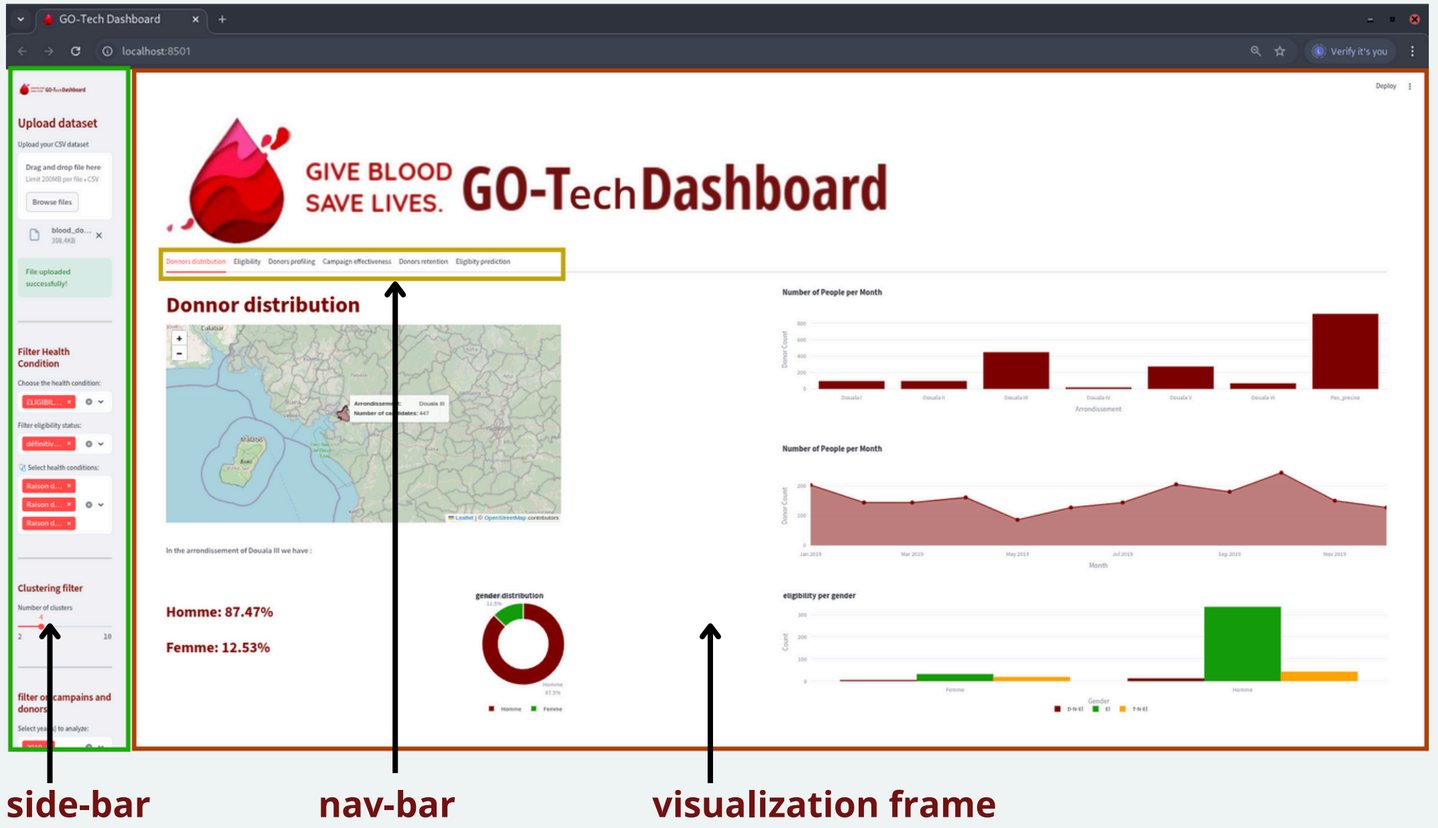
Which gives you the possibility to load and filter information as you may want.

The nav-bar :

Suited to give users an easy way to go through various aspects and quality of information.

The visualization frame :

The main part where visuals and insights from the extracted information are shown.



key functionalities

As define by the proposal the dashboard answer to a series of question by giving an option in the naviguation which go directly in the suited space for the visualization. these are the implemented functionalities :

Donors distribution : aims to visualize the geographical distribution of blood donors based on their residential area.

Eligibility : to see the impact of health conditions (e.g., hypertension, HIV, asthma,diabetes) on blood donation eligibility.

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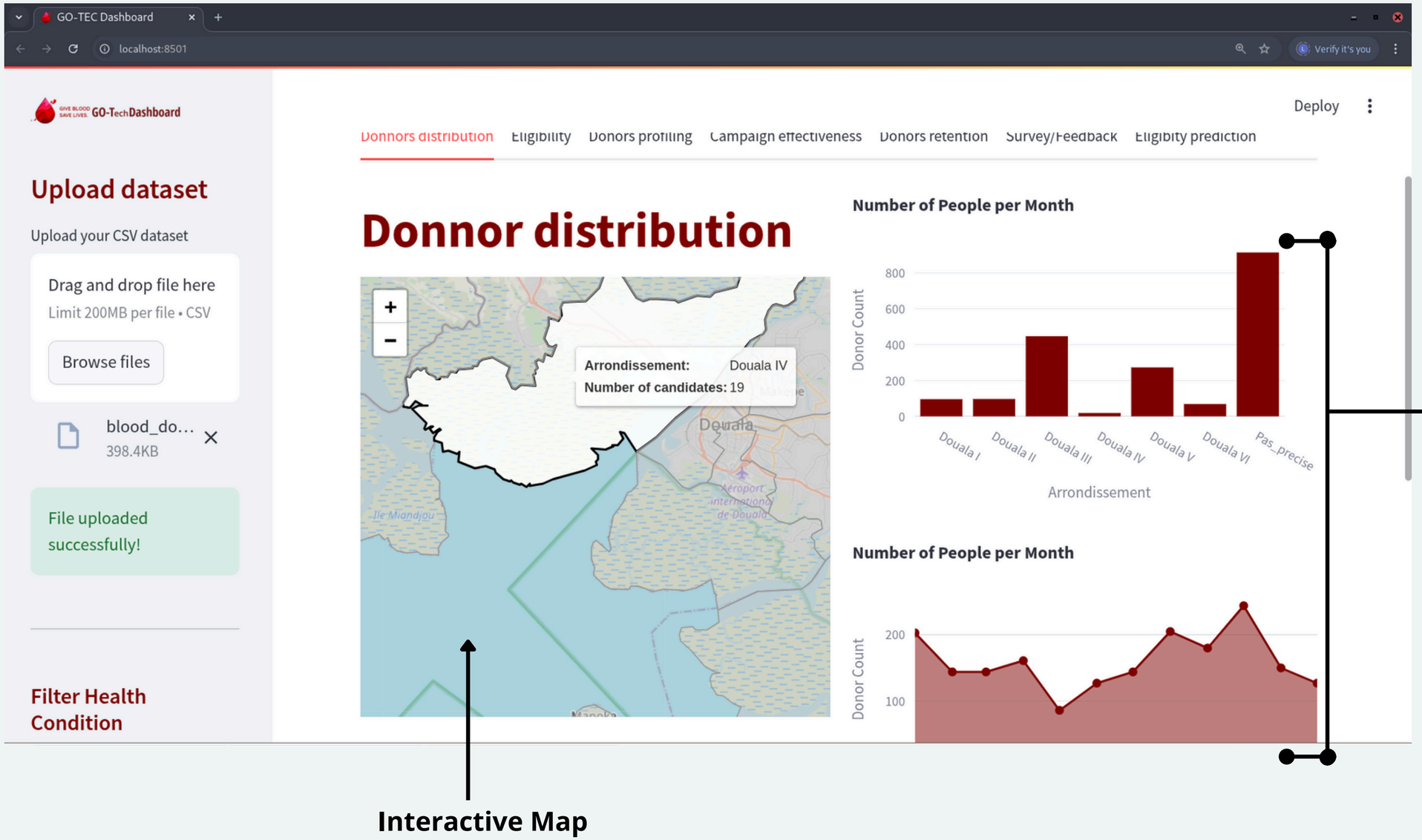
Donors profiling : which aim to group donors into similar profiles based on demographic and health-related features

Campaign effectiveness : to exame the donation date and other demographic factors.

Donors retention : to investigate donor retention by analyzing how often individuals return to donate blood.

Eligibility prediction : to predicts the eligibility of new donors based on demographic and health data.

Donors distribution



hist and trend plot of donors

Interactive Map

Eligibility

blood_do… 398.4KB

File uploaded successfully!

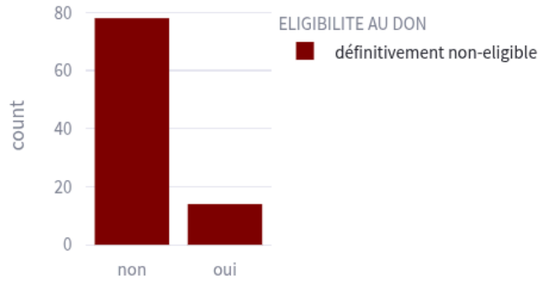
Raison indisponibilit…
Raison indisponibilit…
Raison indisponibilit…
Raison indisponibilit…
Raison de l'indispon…
Raison de l'indispon…
Raison de l'indispon…

Raison d… Raison d… Raison d… Raison d…

Deploy

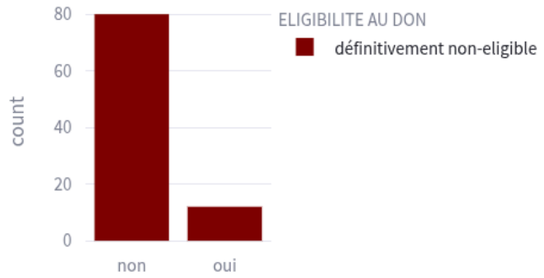
Eligibility analysis

Raison de non-eligibilite totale [Scarifie] impact on eligibility



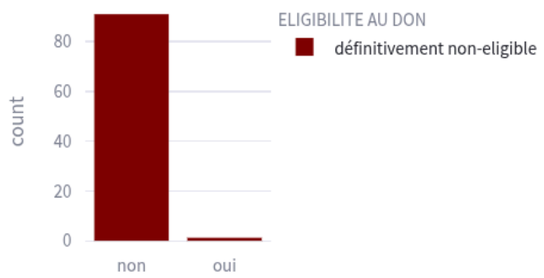
Raison de non-eligibilite totale [Scarifie]

Raison de non-eligibilite totale [Cardiaque] impact on eligibility



aison de non-eligibilite totale [Cardiaque]

Raison de non-eligibilite totale [Hypertendus] impact on eligibility



ison de non-eligibilite totale [Hypertendus]

Raison de non-eligibilite totale [Asthmatiques] impact on eligibility

Donors profiling

Deploy

Clustering filter

Number of clusters

3

2 10

filter on campains and donors

Select year(s) to analyze:

2019 ×

Filter by eligibility:

all

Filter by gender:

all

Filter by profession:

all

Select Categorical Features

Choose categorical features like gender, profession, location, etc.

Categorical Features

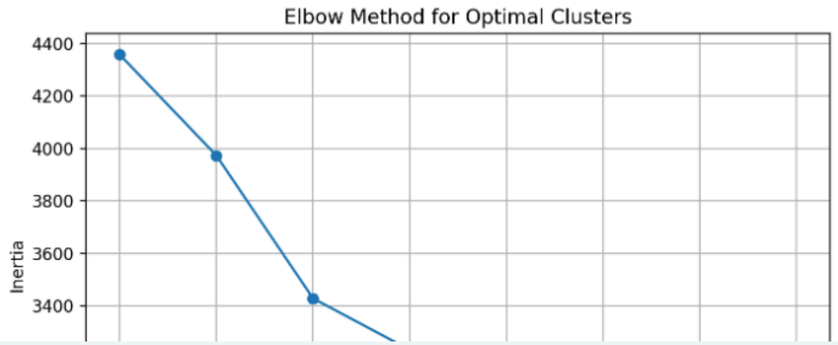
Genre × Profession × domain × Ville ×

Donor Profiling with Clustering

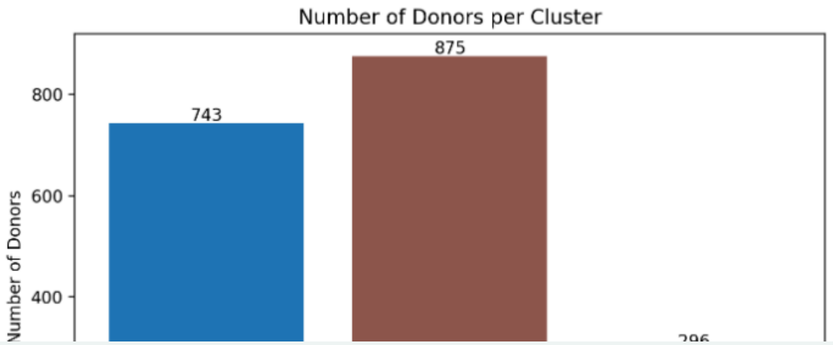
Missing values detected in the following columns:

- Ville: 1 values (0.05%)

Finding Optimal Number of Clusters



Cluster Distribution



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Campaingn efectiveness

Deploy

Clustering filter

Number of clusters

3

2 10

filter on campains and donors

Select year(s) to analyze:

2019 ×

Filter by eligibility:

all

Filter by gender:

all

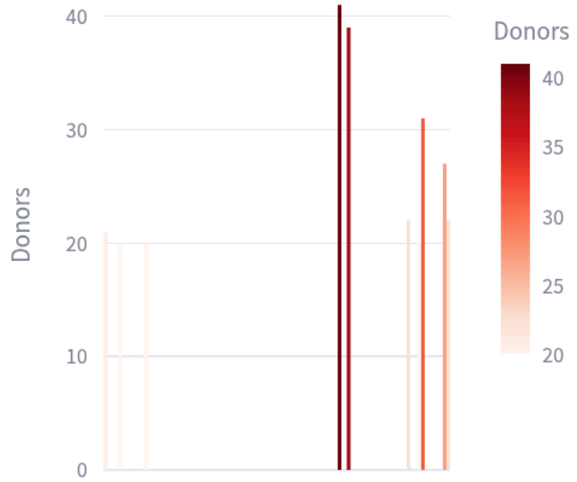
Trend over time

Select time period to observe:

Daily Weekly Monthly

Monthly Donor Trends

Top 10 Days with Most Donors



Donors retention

Deploy

Donnors distribution | Eligibility | Donors profiling | Campaign effectiveness | Donors retention | Survey/Feedback | Eligibity prediction

Clustering filter

Number of clusters

3

2 10

filter on campains and donors

Select year(s) to analyze:

2019 ×

Filter by eligibility:

all

Filter by gender:

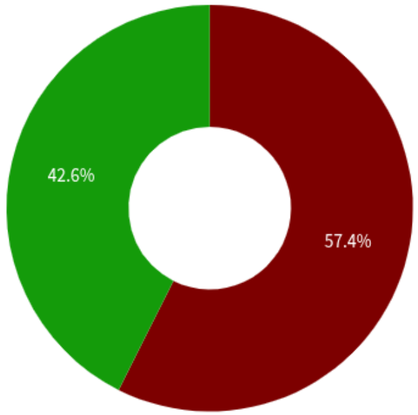
all

Filter by profession:

all

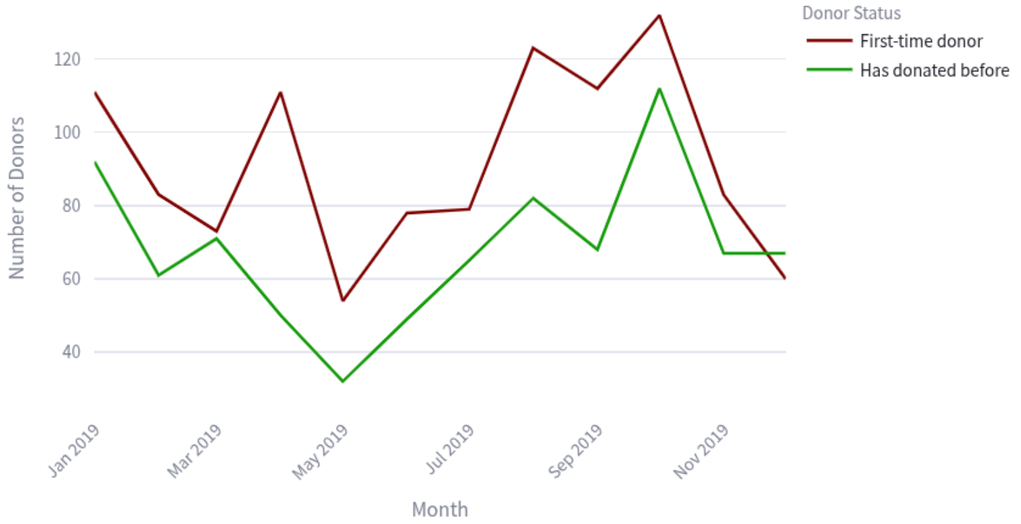
Previous donation analysis

Previous Donation History



First-time donor Has donated before

First-time vs Returning Donors Over Time



Time Between Donations

Eligibility prediction

Deploy

Donnors distribution | Eligibility | Donors profiling | Campaign effectiveness | Donors retention | Survey/Feedback | Eligibity prediction

Clustering filter

Number of clusters

3

2 10

filter on campains and donors

Select year(s) to analyze:

2019 ×

Filter by eligibility:

all

Filter by gender:

all

Filter by profession:

all

Eligibility prediction

Input Data (in JSON format)

Submit

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Conclusion

We have present an interactive dashboard suited to enable better understanding, faster decision-making, and improvement in campaign strategies. The dashboard is focused on specific needs such as the geographical distribution of donors, the analysis of health factors, the conditions of eligibility for donation, the frequencies of donation, ...

The dashboard is fully implemented in python, from the preprocessing up to the prediction and it is available in github in open access.

THANK YOU FOR YOUR KIND ATTENTION !

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