Hajar Asebbane

Age: 24 years

PhD Title:

Generative Models and Their Applications
in Healthcare

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UNIVERSITÉ
MOHAMMED PREMIER

TUBERCULOSIS: A WORLDWIDE HEALTH ISSUE

- 8.6 million new TB cases reported worldwide each year (WHO 2021).

- 1.6 million deaths from TB in 2021.

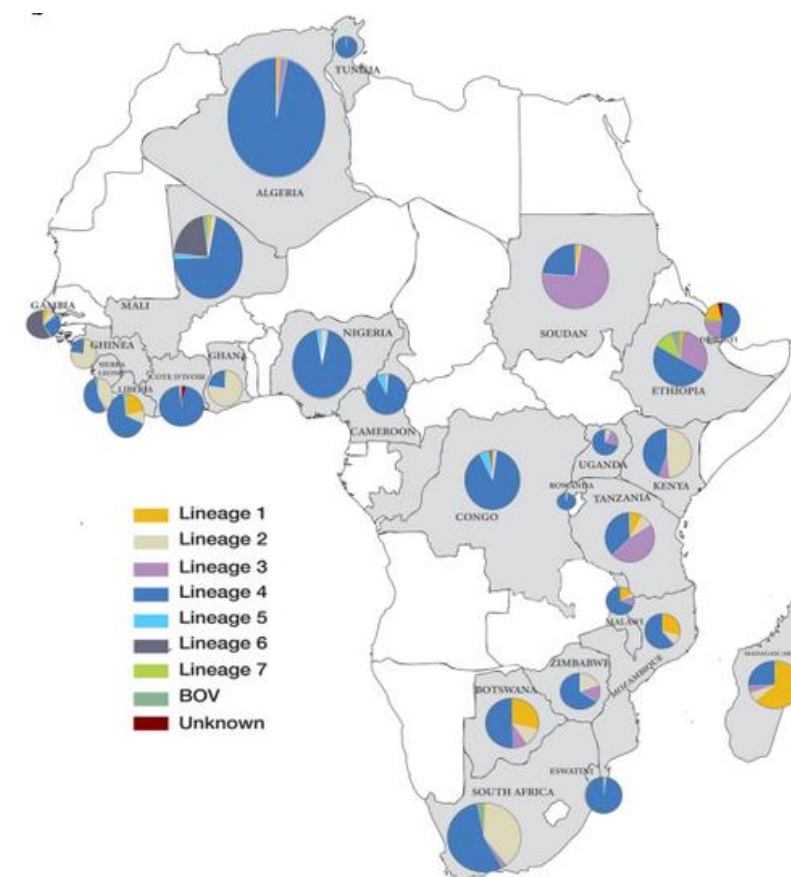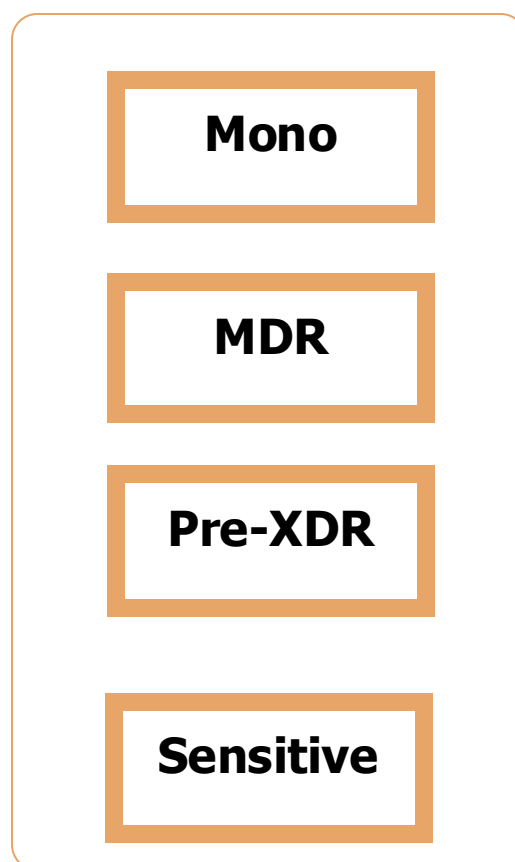- Africa is heavily impacted by TB despite available treatments.
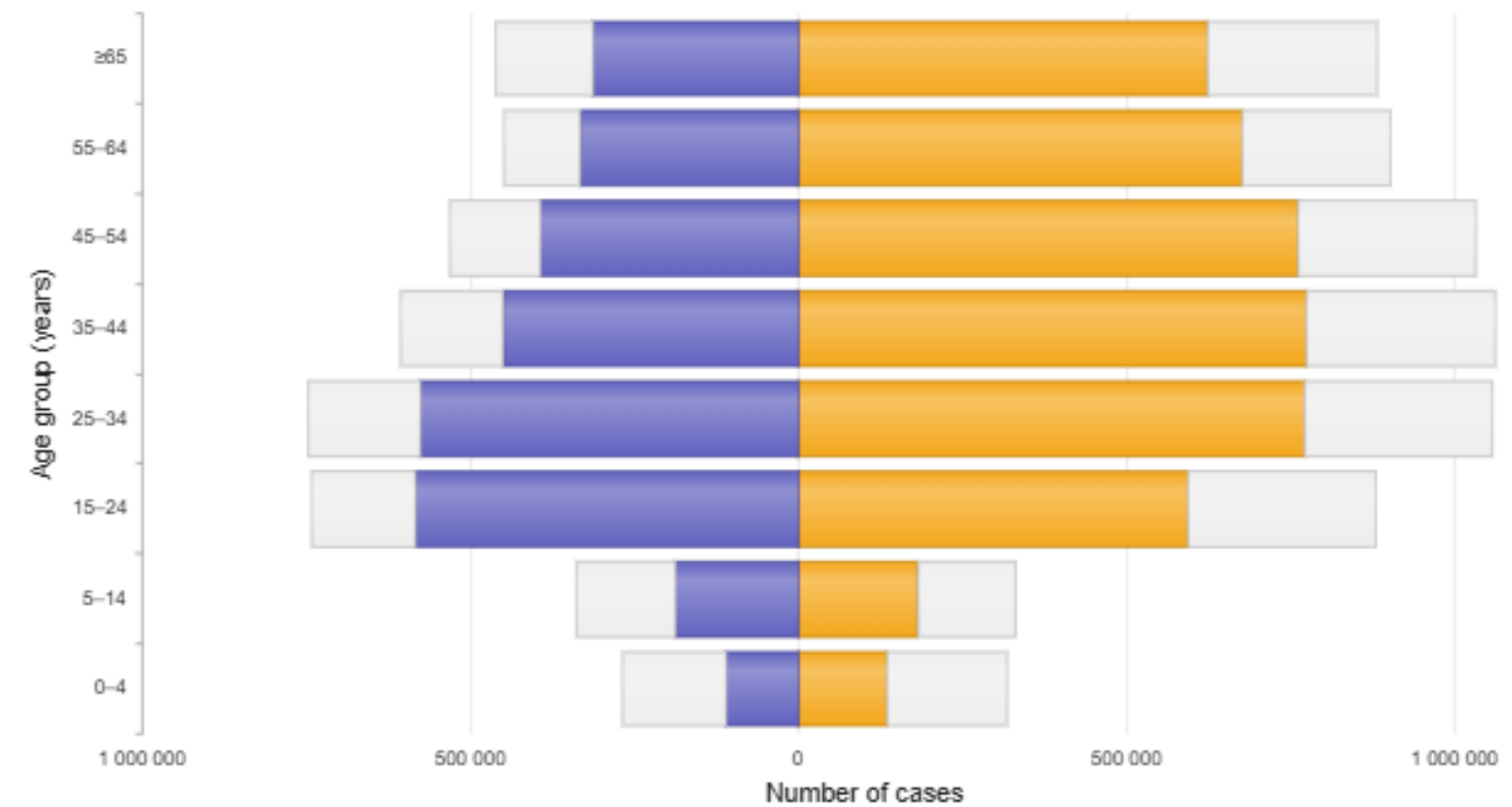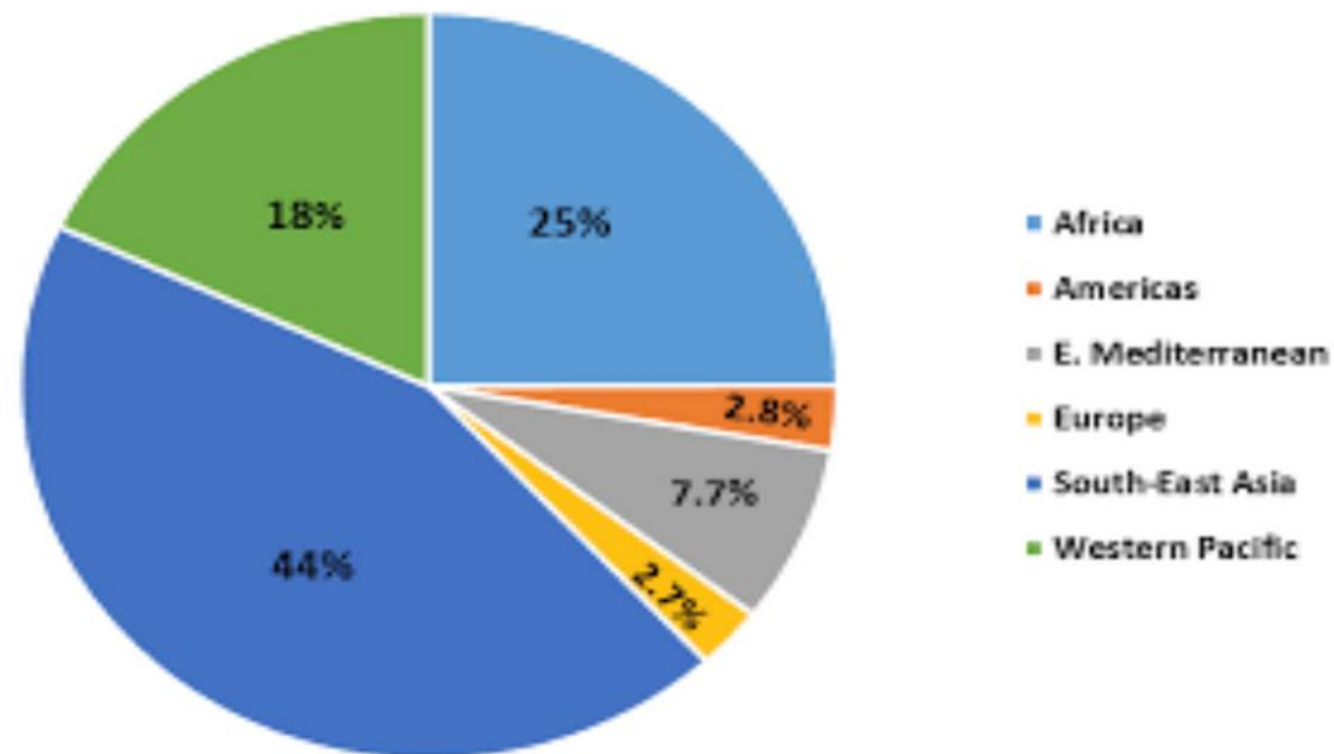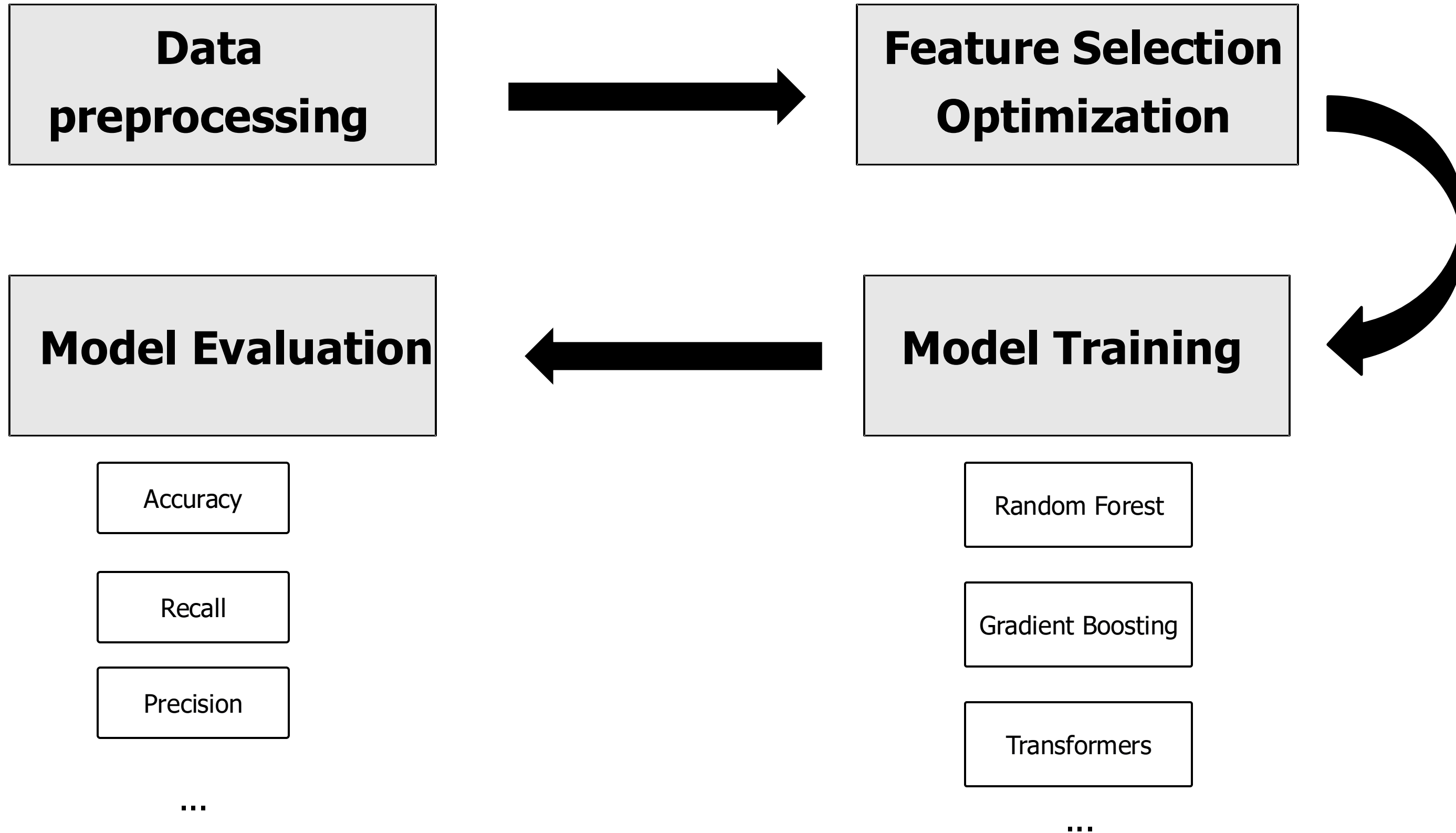
AFRO TB DATASET

26 African countries

Country	Number of samples
Algeria	88
Botswana	94
Cameroon	199
Ivory cost	62
Congo	562
Djibouti	180
Eswatini	51
Ethiopia	288
Gambia	465
Ghana	272
Guinea	185
Kenya	40
Liberia	42
Madagascar	163
Malawi	1789
Mali	279
Mozambique	77
Nigeria	141
Rwanda	417
Sierra Leone	134
South Africa	6902
Sudan	158
Tanzania	550
Tunisia	100
Uganda	490
Zimbabwe	25

13753 Samples

Drug Resistance

Mono

MDR

Pre-XDR

Sensitive

Lineages

Lineage 1
Lineage 2
Lineage 3
Lineage 4
Lineage 5
Lineage 6
Lineage 7
BOV
Unknown

157 mutations in 12 genes

AI MODEL DEVELOPMENT PIPELINE

Data preprocessing → **Feature Selection Optimization** → **Model Training** → **Model Evaluation**

Model Evaluation
- Accuracy
- Recall
- Precision
- ...

Model Training
- Random Forest
- Gradient Boosting
- Transformers
- ...

Matrice de confusion

Thank you for your attention!

Questions?