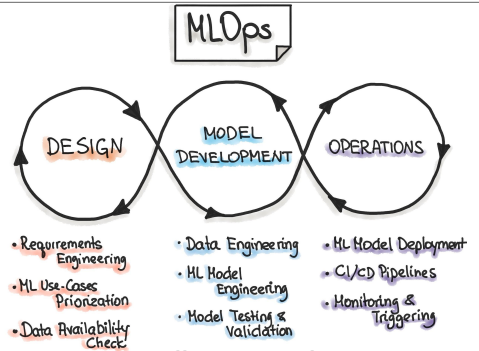
Deploy and operate ML applications in compliance with FATES requirements

Tristan Gouaichault - tristan.gouaichault@irit.fr

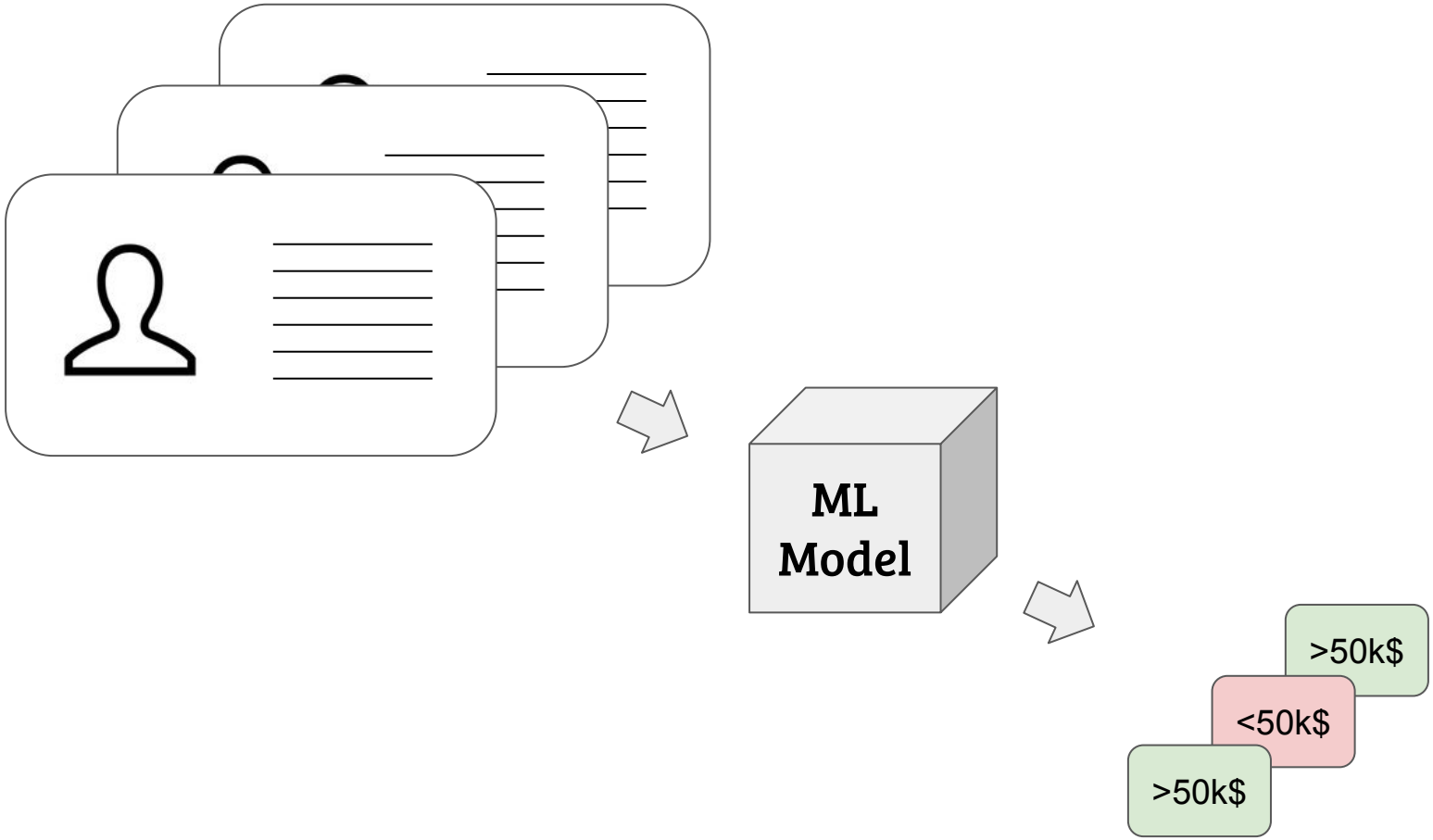
What are the FATES properties?

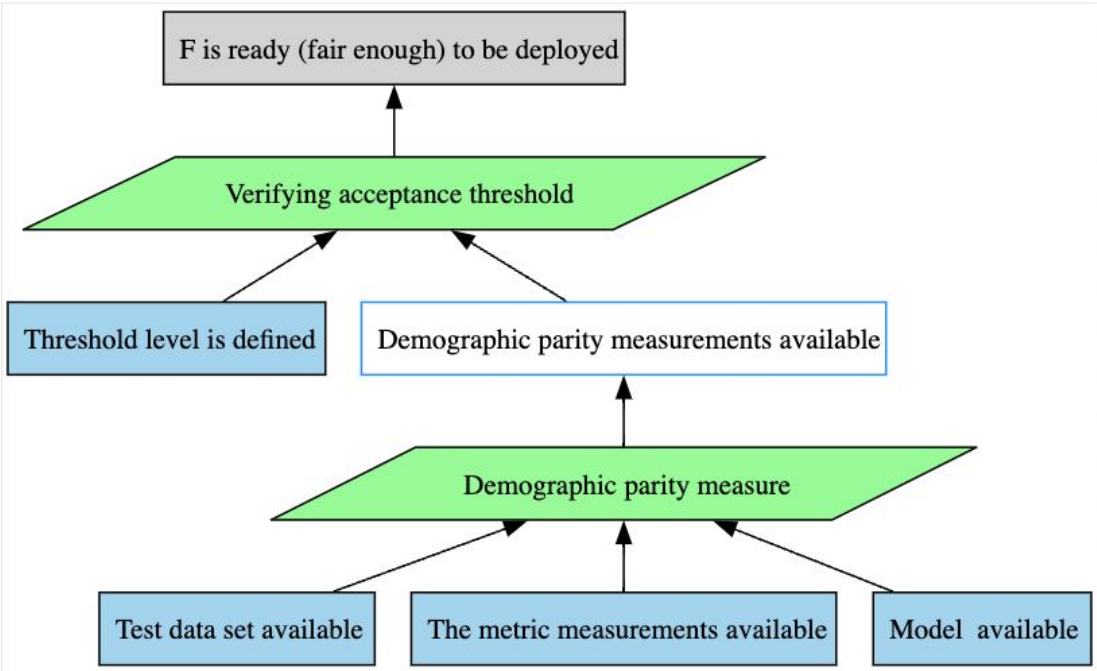
Fairness
Accountability
Transparency
Ethics
Security/Safety/Sustainability/...

What is MLOps?



https://ml-ops.org/


ML
Model
>50k$
<50k$
>50k$



Demographic Parity (property)

Demographic Parity is satisfied when the probability for a positive prediction is the same in each sub-group of the population

Demographic Parity (measure)

Demographic Parity can be measured as a ratio or a difference between the proportion of positive predictions of each sub-group of a test dataset.

We consider the subgroups based on the attribute “gender”

JPipe

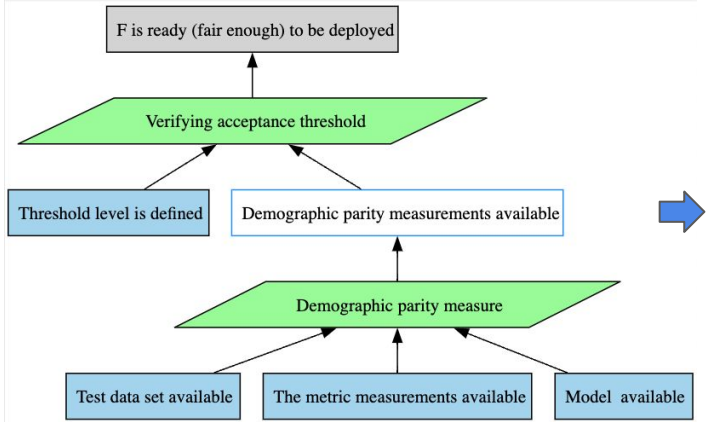
.jd file

fairClassification.jd

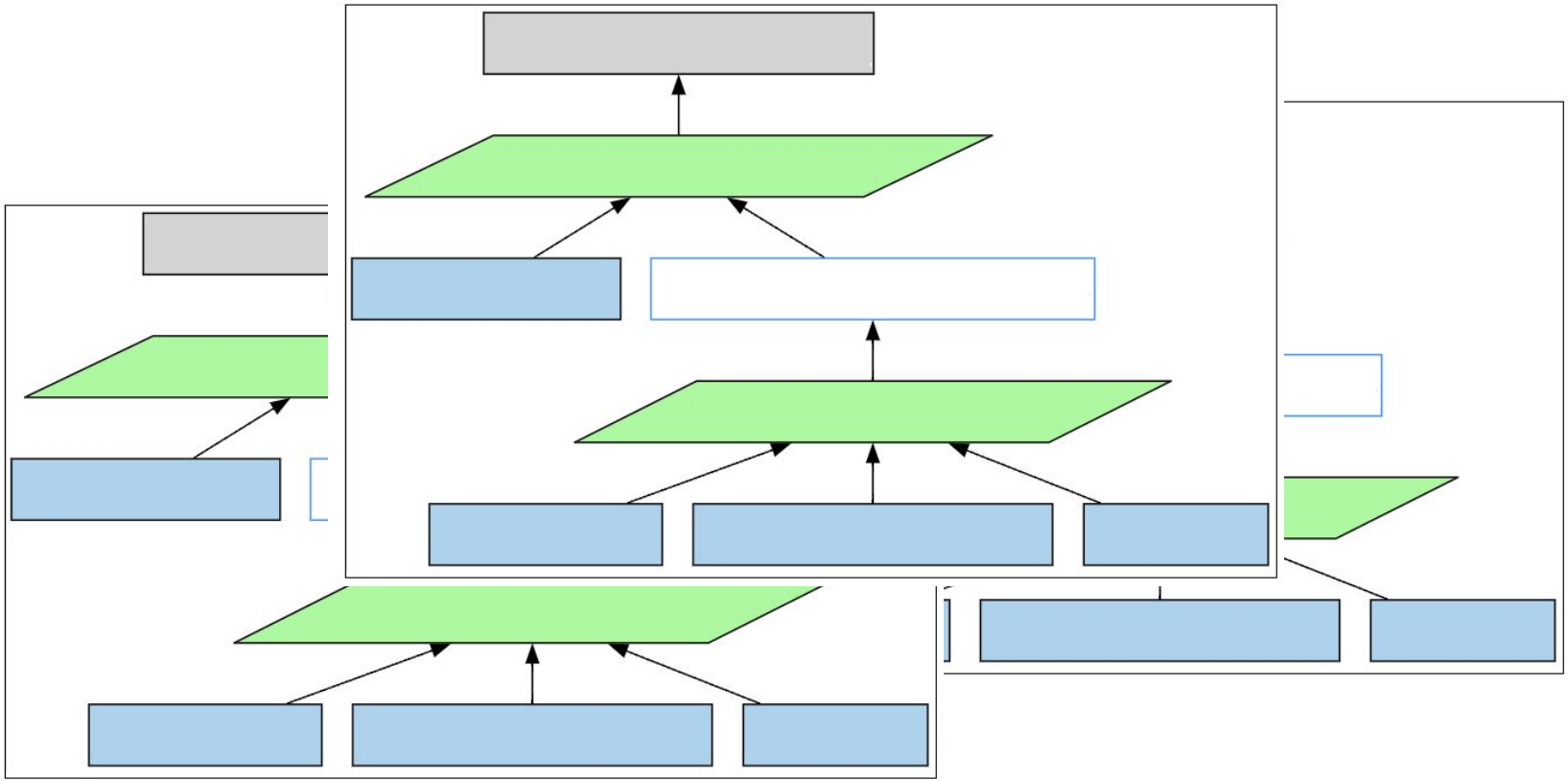
usecase > requirements > fairClassification.jd

```
justification Fairness_definition {

    conclusion c is "F is ready (fair enough) to be deployed"

    strategy verify is "Verifying acceptance threshold"
    verify supports c

    sub-conclusion metric is "Demographic parity measurements available"
    metric supports verify

    //evidence definition is "Fairness is defined"
    //definition supports verify

    evidence level is "Threshold level is defined"
    level supports verify

    strategy fmetric is "Demographic parity measure"
    fmetric supports metric

    evidence dataset is "Test data set available"
    dataset supports fmetric

    evidence model is "Model  available"
    model supports fmetric

    evidence measurement is "The metric measurements available"
    measurement supports fmetric
}
```

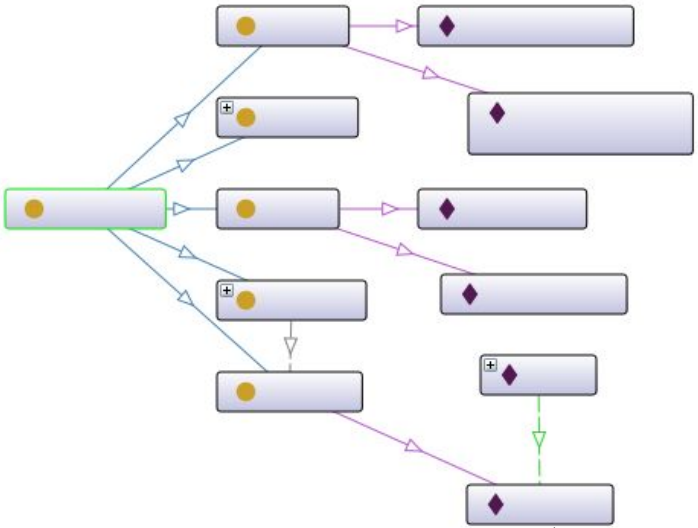
justification model

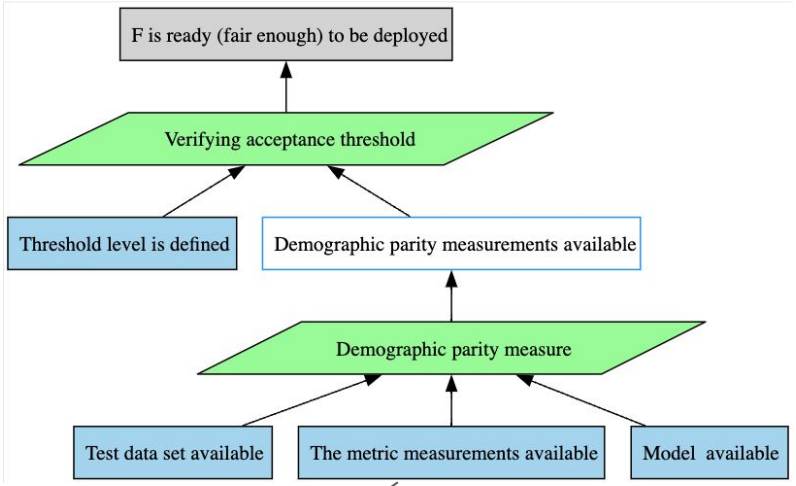


.yml file and .py file (template)



Ontologie




F is ready (fair enough) to be deployed
Verifying acceptance threshold
Threshold level is defined
Demographic parity measurements available
Demographic parity measure
Test data set available
The metric measurements available
Model available

Merci de m’avoir écouté

Mes questions :

- Connaissez vous des utilisations similaires d’ontologies ?
- Des ontologies proches des domaines FATES ?
- D’autres outils pour répondre à ces besoins ?