Fairness Analyze

Endpoint: /api/v1/fairness/Analyse

Payload Details:

biasType: Provide bias type based on your requirement PRETRAIN/POSTTRAIN.

methodType: Provided method type for metric score like disparate impact or ALL will return available metric scores.

taskType: As of now we have only CLASSIFICATION.

Label: Mention the target column name to predict.

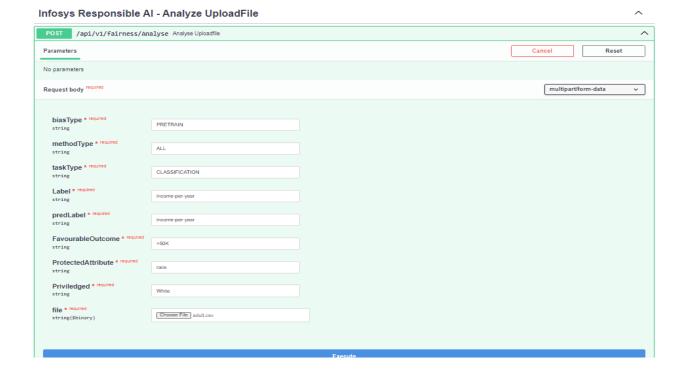
predLabel: Add prediction label. Default is "labels_pred". This is required for POSTTRAIN.

FavourableOutcome: Mention favorable outcome for predict column.

ProtectedAttribute: Mention the protected attribute column name.

Privileged: Mention the privileged value for protected attribute. If multiple Privileged groups are there, entered in this format [priv_1,priv_2],[priv_3,priv_4]

File: Upload the dataset.



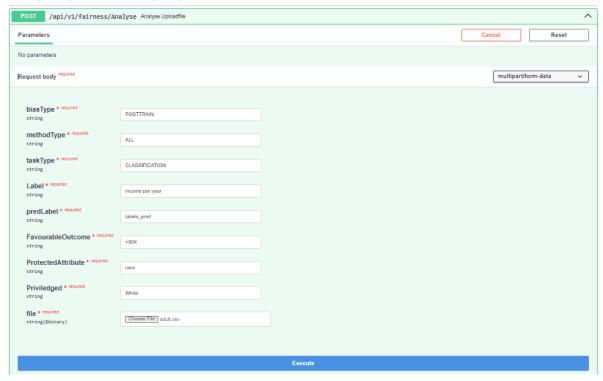
Response:

```
Response body

| Totalisesults*: [
| Totalises
```

For Post Train

Infosys Responsible AI - Analyze UploadFile



Response:

```
Response body

Respon
```

In-Processing Analyze:

Endpoint: api/v1/fairness/inprocessing/exponentiated_gradient_reduction

Step1: Please go to the "exponentiated_gradient_reduction" API at the URL mentioned above.

POST /api/v1/fairness/inprocessing/e	xponentiated_gradient_reduction Inprocessing Exponentiated Gradient Reduction
trainingDataset * required	
string(\$binary)	Choose File No file chosen
testingDataset * required string(\$binary)	Choose File No file chosen
label * required string	income-per-year
favourableOutcome * required string	1
sensitiveFeatures * required	race

Label: Mention the target column name to predict.

FavourableOutcome: Mention favourable outcome for predict column.

Protected Attribute: Mention the protected attribute column name.

Provide datasets required to execute.

```
Code Details

Response body

{
    "modelName": "aware_model_06252024081147.joblib",
    "metrics": {
        "demographic_parity_difference": 0.205579123604275,
        "equalized_odds_difference": 0.4396423248882265,
        "true_positive_rate": 0.6550365785030952,
        "true_negative_rate": 0.93099099099091,
        "false_positive_rate": 0.069009009009001,
        "false_negative_rate": 0.3449634214969049,
        "accuracy_score": 0.8640644192711887
    }
}

Response headers
```

You will receive the return of metric scores, return optimized model name as a response.

Step2: Please go to the "getModel/{filename}" API at the URL mentioned above.

```
GET /api/v1/fairness/inprocessing/getModel/{filename} Inprocessing Get Model
```

Provide the filename to download the model.

Code	Details
200	Response body Download file
	Response headers

Click on download file to save into local.

Individual metrics:

Step1:

Endpoint: api/v1/fairness/individual/bias/getlabels

Please go to the "getlabels" API at the URL mentioned above.



Provide the file id to return attributes for dataset.

```
moquest one
 https://api-aicloud.ad.infosys.com/api/v1/fairness/individual/bias/getlabels
Server response
Code
              Details
200
              Response body
                 "FileName": "adultTrainData.csv",
                 "UploadedFileType": "text/csv",
                 "AttributesInTheDataset": {
                   "FeatureList ": [
                     "age",
                     "workclass",
                     "fnlwgt",
                     "education",
                     "education-num",
"marital-status",
                     "occupation",
                     "relationship",
                     "race",
                     "sex",
                     "capital-gain",
                     "capital-loss",
                     "hours-per-week",
                     "native-country",
"income-per-year"
                  "recordId": "667913342fb10a116b2d7727"
```

Step2:

POST

Please go to the "getscore" API at the URL mentioned above.

/api/v1/fairness/individual/bias/getscore Get Individualscore

```
{
    "labels": [
        "income-per-year"
],
    "recordId": "667913342fb10a116b2d7727|"
}
```

Provide the label and recordld to execute.

You will receive the metrics score for provided dataset.

Mitigate Dataset:

Step-1

Endpoint: api/v1/fairness/pretrain/mitigation/getDataset

POST /api/v1/fairness/pretrain/mitigation/getDataset Get Data		
Request body required		
MitigationType * required string	PREPROCESSING	
MitigationTechnique * required string	DEMEROLING	
	REWEIGHING	
taskType * required string	CLASSIFICATION	
fileId * required		
number	1712558644.746234	

MitigationType: Mention the mitigationType Preprocessing.

MitigationTechinque: Mention the mitigationTechinque to mitigate.

taskType: As of now we have only CLASSIFICATION.

fileId: provide file id from database.

After entering all the necessary data, proceed by clicking on "execute."

You will receive the return of all attributes for provided dataset as a response.

```
https://api-aicloud.ad.infosys.com/api/v1/fairness/pretrain/mitigation/getDataset
Server response
Code
             Details
200
              Response body
                 "mitigationType": "PREPROCESSING",
                 "mitigationTechnique": "REWEIGHING",
                 "trainFileName": "adultTrainData.csv",
                 "UploadedFileType": "text/csv",
                 "AttributesInTheDataset": {
                   "FeatureList ": [
                     "age",
                     "workclass",
                     "fnlwgt",
                     "education",
                     "education-num",
"marital-status",
                     "occupation",
                     "relationship",
                     "race",
                     "sex",
                     "capital-gain",
                     "capital-loss",
                     "hours-per-week",
                     "native-country",
"income-per-year"
                   "CategoricalAttributesList": [
                     "workclass",
                     "education",
                     "marital-status",
                     "occupation",
```

Step-2:

POST

Resnonse headers

Please go to the "pretrain/mitigation/getAttributes" API at the URL mentioned above

/api/v1/fairness/pretrain/mitigation/getAttributes Get Attributes

Request body required	
Label * required string	income-per-year
FavourableOutcome * required	>50K
string	>3011
ProtectedAttribute * required string	race
Priviledged * required	
string	White
recordid * required string	66790c542fb10a116b2d7676
3 LI TIIG	

Provide necessary data to execute.

Label: Mention the target column name to predict.

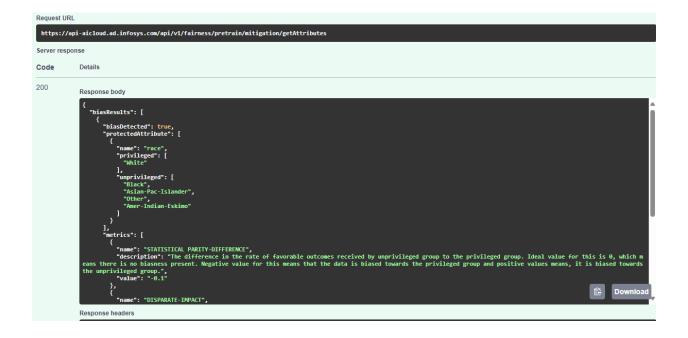
FavourableOutcome: Mention favourable outcome for predict column.

ProtectedAttribute: Mention the protected attribute column name.

Privileged: Mention the priviledged value for protected attribute.

recordId: Provide the record id which is returned in getDataset Api along with attributes.

You will receive the metrics score for provided dataset and mitigated filename as a response.



Step3:



Use above endpoint to download mitigate dataset by provided filename.

```
Code Details

200

Response body
Download file
Response headers

connection: keep-alive
content-disposition: attachment; filename=PMitigated_adultTrainData.csv_06242024062721csv
content-length: 21822148
date: Mon,24 Jun 2024 06:27:42 GMT
etag: "59df96c5d8b558a1567ea47a0e6df86"
last-modified: Mon,24 Jun 2024 06:27:22 GMT
server: nginx/1.19.5
x-envoy-upstream-service-time: 2
```

Click on download file to download the into local.