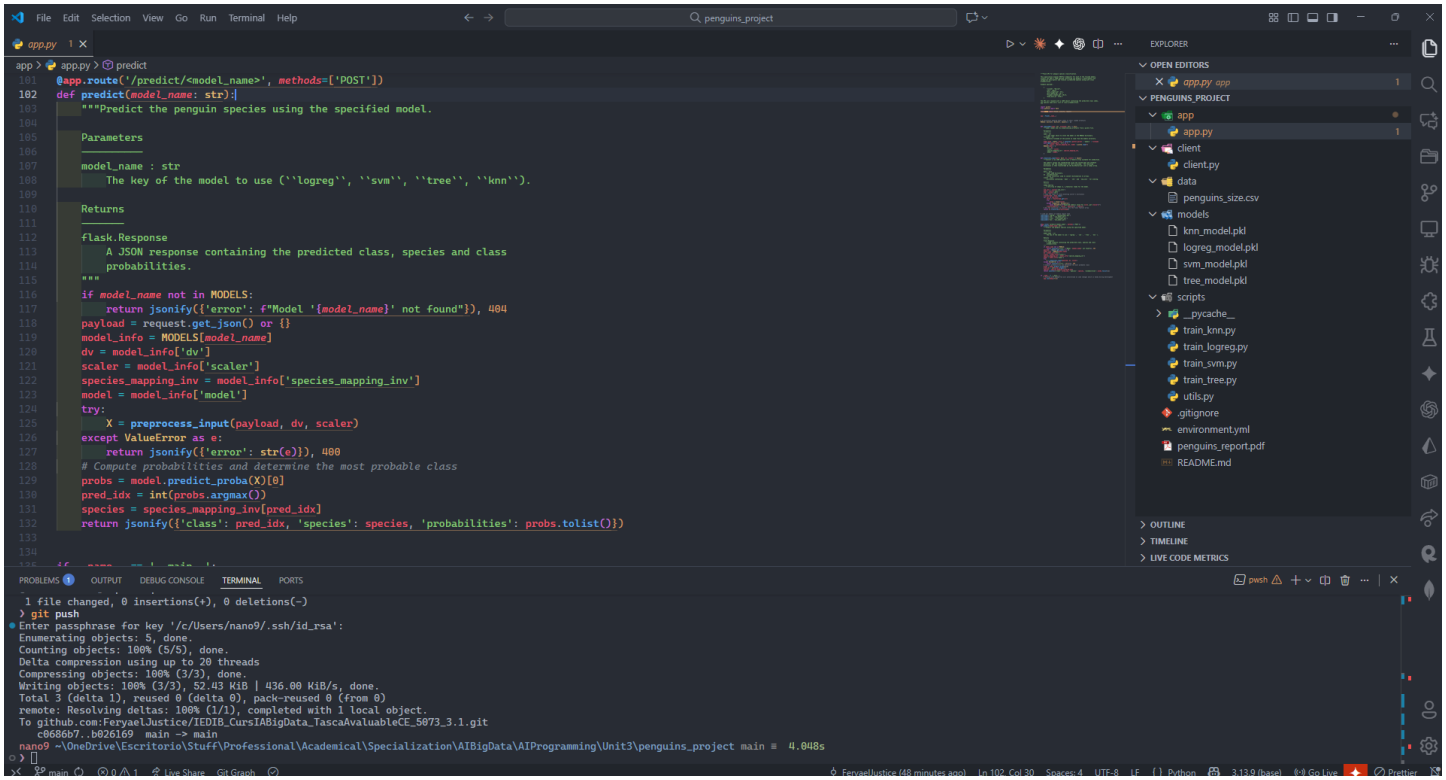
# Informe del projecte de classificació de pingüins

URL del repositori GitHub:
https://github.com/FeryaelJustice/IEDIB_CursIABigData_TascaAvaluableCE_5073_3.1

## Estructura del projecte




```
penguins_project/
  README.md
  environment.yml
  models/
    knn_model.pkl
    logreg_model.pkl
    svm_model.pkl
    tree_model.pkl
  client/
    client.py
  data/
    penguins_size.csv
  scripts/
    train_knn.py
    train_logreg.py
    train_svm.py
    train_tree.py
    utils.py
    _pycache_/
      utils.cpython-311.pyc
  app/
    app.py
```

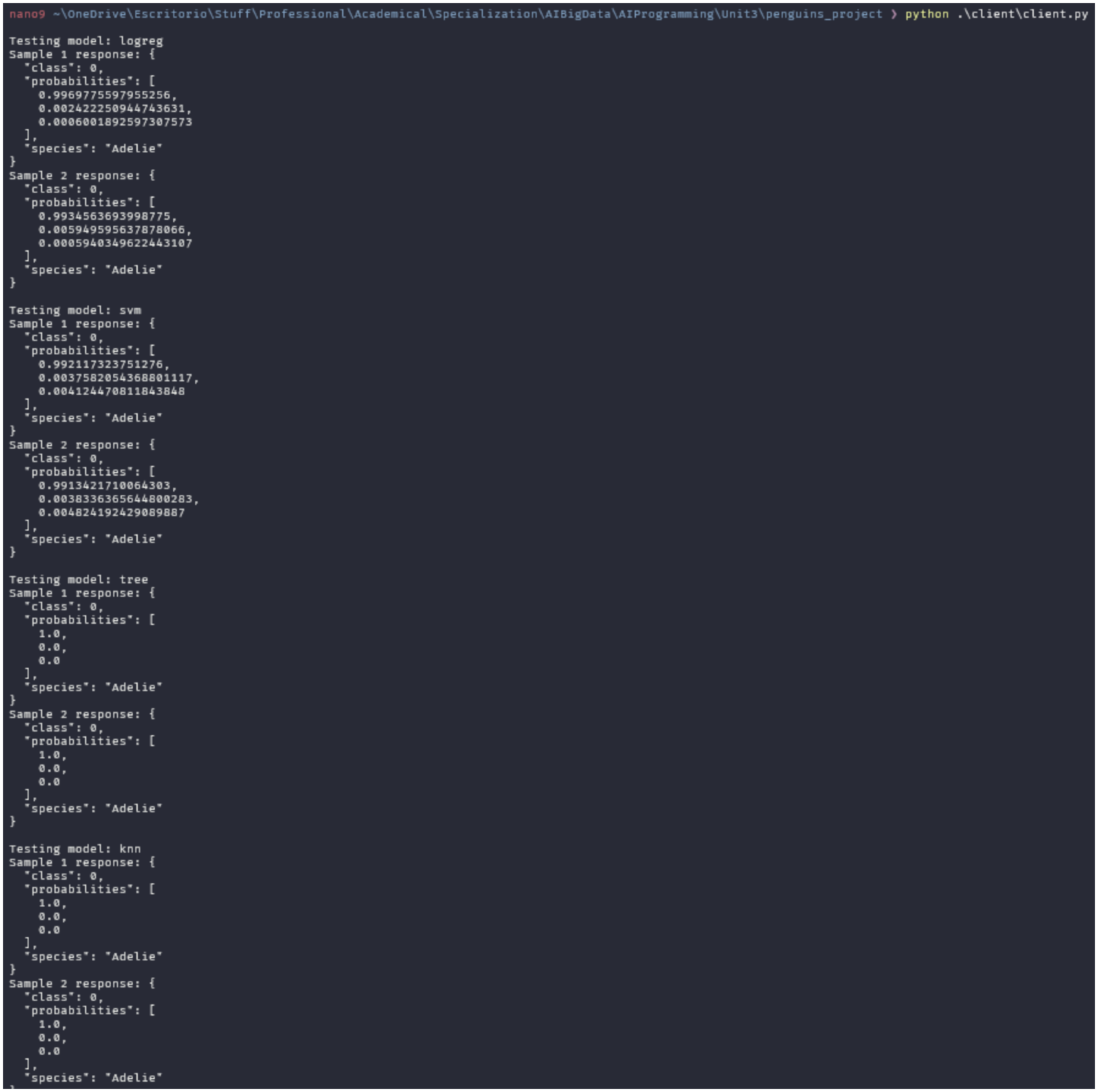
### Contingut de environment.yml

```
name: penguins-env
channels:
  defaults
dependencies:
  python=3.9
  pandas
  seaborn
  scikit-learn
  flask
  requests
  numpy
  joblib
  pip
```

environment.yml

```yaml
name: penguins-env
channels:
  - defaults
dependencies:
  - python=3.10
  - pandas
  - seaborn
  - scikit-learn
  - flask
  - requests
  - numpy
  - joblib
  - pip
```

**Execució del client**



```
nano9 ~\OneDrive\Escritorio\Stuff\Professional\Academical\Specialization\AIBigData\AIProgramming\Unit3\penguins_project ❯ python .\client\client.py

Testing model: logreg
Sample 1 response: {
  "class": 0,
  "probabilities": [
    0.9969775597955256,
    0.002422250944743631,
    0.000600189259730757 3
  ],
  "species": "Adelie"
}
Sample 2 response: {
  "class": 0,
  "probabilities": [
    0.9934563693998775,
    0.005949595637878066,
    0.000594034962244 3107
  ],
  "species": "Adelie"
}

Testing model: svm
Sample 1 response: {
  "class": 0,
  "probabilities": [
    0.992117323751276,
    0.0037582054368801117,
    0.004124470811843848
  ],
  "species": "Adelie"
}
Sample 2 response: {
  "class": 0,
  "probabilities": [
    0.9913421710064303,
    0.0038336365644800283,
    0.00482419242908988 7
  ],
  "species": "Adelie"
}

Testing model: tree
Sample 1 response: {
  "class": 0,
  "probabilities": [
    1.0,
    0.0,
    0.0
  ],
  "species": "Adelie"
}
Sample 2 response: {
  "class": 0,
  "probabilities": [
    1.0,
    0.0,
    0.0
  ],
  "species": "Adelie"
}

Testing model: knn
Sample 1 response: {
  "class": 0,
  "probabilities": [
    1.0,
    0.0,
    0.0
  ],
  "species": "Adelie"
}
Sample 2 response: {
  "class": 0,
  "probabilities": [
    1.0,
    0.0,
    0.0
  ],
  "species": "Adelie"
}
```

```
Testing model: logreg
Sample 1 using local model (API unreachable)
{
  "class": 0,
  "species": "Adelie",
  "probabilities" :
    0.9969775597955256,
    0.0024222509447436352,
    0.0006001892597307583
  ]
}
Sample 2 using local model (API unreachable)
{
  "class": 0,
  "species": "Adelie",
```

```
  "probabilities" :
    0.9934563693998775,
    0.005949595637878076,
    0.0005940349622443113
  ]
}

Testing model: svm
Sample 1 using local model (API unreachable)
{
  "class": 0,
  "species": "Adelie",
  "probabilities":
    0.9918544451263396,
    0.003925854539258974,
    0.004219700334401474
  ]
}
Sample 2 using local model (API unreachable)
{
  "class": 0,
  "species": "Adelie",
  "probabilities" :
    0.9910567732514018,
    0.0039977529788696115,
    0.00494547376972864
  ]
}

Testing model: tree
Sample 1 using local model (API unreachable)
{
  "class": 0,
  "species": "Adelie",
  "probabilities":
    1.0,
    0.0,
    0.0
  ]
}
Sample 2 using local model (API unreachable)
{
  "class": 0,
  "species": "Adelie",
  "probabilities" :
    1.0,
    0.0,
    0.0
  ]
}

Testing model: knn
Sample 1 using local model (API unreachable)
{
```

```
  "class": 0,
  "species": "Adelie",
  "probabilities" :
    1.0,
    0.0,
    0.0
  ]
}
Sample 2 using local model (API unreachable)
{
  "class": 0,
  "species": "Adelie",
  "probabilities":
    1.0,
    0.0,
    0.0
  ]
}
```


### Comentari dels resultats

Les quatre peticions corresponents a cada model retornen la mateixa classe (Adelie) amb probabilitats molt altes per a aquesta espècie.
L'arbre i el KNN retornen una probabilitat de 1.0, mentre que la regressió logística i l'SVM assignen gairebé tota la massa de probabilitat a Adelie.