

Estructura del proyecto

```
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
```

Execució del client

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.