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import pandas
import numpy as np
import sklearn
from micromlgen import port
import matplotlib.pyplot as plt

pd1 = pandas.read_csv('fem.csv')
pd2 = pandas.read_csv('masc.csv')

#convert nan to 0
pd1 = pd1.fillna(0)
pd2 = pd2.fillna(0)

#convert to numpy array
np1 = pd1.to_numpy()
np2 = pd2.to_numpy()

#plot np1[0]
plt.plot(np1[0])
plt.savefig('test_np1.png')

#train and test
train = np.concatenate((np1, np2), axis=0)
labels = np.concatenate((np.zeros(len(np1)), np.ones(len(np2))), axis=0)

#sample test from train removing it
from sklearn.model_selection import train_test_split
train, test, labels, labels_test = train_test_split(train, labels, test_size=0.2,
random_state=42)

#train
from sklearn.linear_model import LogisticRegression
model = LogisticRegression( max_iter=1000)
model.fit(train, labels)

#save model
import pickle
pickle.dump(model, open('model.pkl', 'wb'))

#load model
model = pickle.load(open('model.pkl', 'rb'))

#test with dataset train
print(model.predict(train))

print("test samples")
print(model.predict(test))

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print("labels test")
print(labels_test)

#port
ported = port(model)

#save ported to txt file
with open('my_model.h', 'w') as f:
    f.write(ported)

print("finished")

pass
```