Cairo University

Faculty of Computers and Artificial Intelligence

Information Technology Department

Third Year (2023-2024)

Pattern Recognition

Research Project (10 marks)

Select one of the following problems with an associated dataset

Examples

1. heart diseses predection

https://www.kaggle.com/competitions/FCIS-BIO-

1/data

2. Diabetes prediction dataset

https://www.kaggle.com/datasets/iammustafatz/diabetes-prediction-

dataset'

3. Mobile Price Classification

https://www.kaggle.com/datasets/iabhishekofficial/mobile-price-

classification

4. Cancer Data

https://www.kaggle.com/datasets/erdemtaha/cancer-

data

5.Heart Attack Analysis & Prediction Dataset

https://www.kaggle.com/datasets/rashikrahmanpritom/heart-attack-analysis-

prediction-dataset

6.COVID-19 Dataset

https://www.kaggle.com/datasets/meirnizri/covid19-

dataset

7. Customer Clustering

https://www.kaggle.com/datasets/dev0914sharma/customer-

clustering

8. Iris Flower Dataset

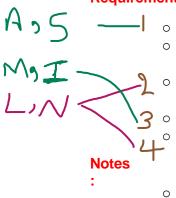https://www.kaggle.com/datasets/arshid/iris-flower-

dataset

9.Abalone Dataset

https://www.kaggle.com/datasets/rodolfomendes/abalone-

dataset

10.Covid_w/wo_Customer Chest Xray

https://www.kaggle.com/rashikrahmanpritom/covid-wwo-pneumonia-

chest-xray

Requirements:

A, 5

M, I

L, N

1

2

3

4

- o Build a complete pattern recognition system to solve the selected problem.
- o Coding of your work [will be discussed in the lab: week starting from 18/5/2024 **(7 marks)]**
- o A report that describes your methodology for solving the problem, and the detailed result of your implementation **(3 marks)**
- o Using swarm optimization technique for feature selection [**1 bonus]**
- o Using feature reduction technique instead of PCA [**1 bonus]**

Notes :

- o Each group consists of 5-6 students.
- o You can implement any feature extraction or classifier (whether you study in the course or not)
- o Deep learning-based systems are not allowed.
- o Groups with the same project will be discussed by the same TA (So be sure to have a different methodology in your implementation)
- o You will submit your report before the coding discussion (the day will be announced later)

Good Luck all