



DEPARTMENT OF ELECTRICAL AND INFORMATION ENGINEERING
UNIVERSITY OF RUHUNA

Module Code	EE5253	Module Title	Machine Learning (core)
Project Intent	2% of final mark	1 page project intent according to following guidelines	
Deadline	17 th Nov 2023	Late Assignments: Assignments submitted after 8am on 18th Nov will be considered late and will not get any marks. However, it needs to be submitted in order for the module to be completed. <i>*NOTE: LMS crashing on the 16th or 17th is not an acceptable reason for late assignments.</i>	
Learning Objectives for Assignment	LO-1 : Understand the theory and limitations of machine learning algorithms and the pipeline to solve a machine learning problem. LO-2 : Implement supervised and unsupervised algorithms in a high-level programming language. LO-4 : Formulate and execute algorithm for potential real-world applications of machine learning.		
Honour Code	This is a group project (2 students per group). Do not copy from other groups (either on campus or outside campus). Cite your sources, avoid plagiarism.		

- **Instructions:**

Pick a real world example of implementing a machine learning problem. It can be a classification, regression or clustering problem (supervised or unsupervised). Search online databases where you can get the input data for this problem. Decide on 2 algorithms you can use to solve this problem. Submit 1 page project intent/ proposal according to following outline

- Upload the Project Intent as a Word or pdf file named as following;

EE5253_ProjectIntent_GroupXX.pdf where XX = group no (01,02,03, ... 10,11,12, etc).

ONLY one submission per group. If 2 submissions are made, one of them will be graded on random.

- Any submissions above 1 page will not get any marks.

Outline: (no need of a front page)

- **Group Number:** see group number here.
https://docs.google.com/spreadsheets/d/1yMtxBdr2hxJwxJEh_YdFESOgQZnAcVHobEBtgPv4FMI/edit#gid=0
- **Names of students and index numbers:**
 - a. EG/2020/xxxx, Last Name, initials, UoR email address (shown on LMS)
 - b. EG/2020/yyyy, Last Name, initials, UoR email address (shown on LMS)
- **Project title:** Give a short but descriptive title
- **Introduction (2-4 sentences maximum):** Field of project. What is the problem? Why is it important?
- **Defining the ML problem:** T: task, E: experience, P: performance measure. For further information read chapter 1 of “Machine Learning” by Tom Mitchell 1997 ISBN: 0070428077
- **Data:**
 - a. Where are you getting your data - web links/ journal references etc (make sure the links work)
 - b. What are the features you are entering into your algorithm? How many features?
 - c. How many examples do you have in your data set?
 - d. What are the possible methods of handling missing data?
- **Algorithm:**
 - a. List 2 algorithms you will use. Project can be done from any two of the following algorithms (ANN based algorithms not allowed as it is left for AI in sem 6). If you want to use something else, please discuss with Dr Prins before the 3rd of November.
 - i. **Linear Regression**
 - ii. **Logistic Regression**
 - iii. **SVM**
 - iv. **Naïve Bayes**
 - v. **Decision Trees**
 - vi. **k-means**
 - vii. **k-Nearest neighbour**
 - viii. **Any other algorithm that is not ANN based or RL based – should get prior permission.**

b. Are the algorithms available off the shelf from the libraries?

END of Assignment