FACULTY OF ENGINEERING, UNIVERSITY OF JAFFNA

EC8020 –COMPUTER ENGINEERING DESIGN PROFICIENCY

DESIGN TASK 5

Machine Learning

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1. **Introduction**

   Machine learning covers wide research areas such as image processing/ recognition, machine translation, computational biology/ bioinformatics, computational finance, signal processing/modelling, etc. This paper discusses some biological problem, where they predict The malignancy of the breast cancer. This is a binary class problem to predict whether the cancer is benign or malignant.

2. **Problem**

   Breast cancer data is used from University of California, Irvine (UCI) data repository. Eleven different attributes were measured on 699 patients. They did some preprocessing of data and used that data for classifying the tumor into either benign or malignant. Research paper is attached for your reference.

   1st week you are expected to:

   - Read and understand the given research paper carefully.
   - Discuss their work within your group.
   - Make a poster to explain their work.
   - Answer the questions from other groups.

   2nd week you are expect to:

   - Submit the same implementation stated in the article.
   - On top of that, try extra machine learning algorithms (at least five different algorithms) on the same problem and list the accuracies by all of them.
   - Basic knowledge about each algorithm you are using is very important.
   - You are expected to submit a short report reflecting your work.

4. **Reference**

   Meriem, Amrane & Oukid, Saliha & Gagaoua, Ikram & Ensari, Tolga. (2018). Breast cancer classification using machine learning. 1-4. 10.1109/EBBT.2018.8391453.