

ASSIGNMENT 1

Due Date: 24 August 2021

QUESTION 1

The Department of Computing Sciences makes use of a streaming system to decide whether potential first year programming students should be allowed into the course or not. In order to make an intelligent decision, it is important to make a reasonably accurate prediction of the student's final programming mark. The prediction system makes use of three of the student's APAP marks: Arithmetic (M_{Ar}), Elementary Algebra (M_{ELAI}) and Reading Comprehension (M_{RC}).

It is possible to make use of AI techniques to predict the mark of an individual based on the three attributes mentioned above. Create a single neuron to act as a mark predictor. The neuron should take as input the three known attributes of an individual and then output the mark of that individual. Use the data in *Streamdata.csv* to train your neuron. Exclude some of the data from the training process so that you can test the effectiveness of your neuron. Make use of your trained neuron to predict the marks of the ten individuals found in *Evaluation.csv*.

Investigate the effect of varying the learning rate (η) on training time and accuracy. Complete the submission template for this assignment. Try to keep the completed template to two pages. Attach your code to your submission.

This is NOT a group assignment. Your submission should be your own original work. You may NOT reuse code written by anyone else, nor may you make use of the various neural network packages that are available.