UNIVERSITY OF LINCOLN

CMP3751M Machine Learning Assessment 2 of 2 CRG 2019 – 2020

Indicative Weighting: 50%

Learning Outcome	Criterion	Pass	2:2	2:1	1st
LO1 Critique and appraise the scope and limits of machine learning methods by identifying their strengths and weaknesses LO2: Using a non-trivial dataset, plan, execute and evaluate significant experimental investigations using multiple machine learning strategies	Section 1: Data Summary, Pre-processing and Visualisation (20%) This section is focused on data summary, pre-processing and visualisation.	You have provided a basic description of the dataset, carried out some data pre-processing steps, and provided one of the plots. Your discussion and presentations are brief with little critique.	You have described the dataset to a good standard, carried out some data pre-processing steps, and provided the plots. Your discussion and presentations are clear and informative and provide adequate detail on some data preprocessing steps or data visualisation or interpretation.	You have described the dataset to a very good standard, carried out significant data pre-processing steps with proper explanation, and provided the two plots to a good standard. Your discussion and presentations are clear and detailed, with good understanding of the processes and techniques used.	You have clearly described the dataset to an excellent standard, carried our substantial and key data preprocessing steps with extensive explanation, and provided the two plots to a great standard. Your discussion and presentations are detailed, in-depth, and offer a critique of the steps undertaken. A significant amount of the discussion is related to the key information obtained from the processes.
	Section 2: Discussion on Selecting an Algorithm (30%) This section presents a significant and detailed discussion on appropriate methods of selecting an algorithm.	You have demonstrated a basic understanding of how to select an algorithm correctly. Your discussion and presentations are brief with little critique.	You have demonstrated a good understanding of how to select an algorithm correctly. Your discussion and presentations are clear and detailed, with good focus on the model selection.	You have demonstrated a significant understanding of how to select an algorithm correctly. Your discussion and presentations are detailed and in-depth. A significant amount of the discussion is related to the model selection.	You have demonstrated an excellent understanding of how to select an algorithm correctly. Your discussion and presentations are detailed and in-depth. A significant amount of the discussion is related to the key information for performing model selection.
	Section 3: Designing Algorithms (30%) This section presents the detailed process to design and implement an algorithm on a data set.	The following tasks have been carried out to a basic standard and may not be fully complete: i) You have split the data as required; ii) You have explained the process to implement at least one of the algorithms; iii) You	The following tasks have all been carried out to a good and detailed standard: i) You have split the data as required; ii) You have explained the process to implement both algorithms; iii) You have	The following tasks have all been carried out to a very good and detailed standard: i) You have split the data as required; ii) You have explained the process to implement both algorithms; iii) You have reported the results of both algorithms.	The following tasks have all been carried out to an outstanding and detailed standard: i) You have split the data as required; ii) You have explained the process to implement both algorithms; iii) You have reported the results of both algorithms. A significant

		have reported the results of at least one algorithm.	reported the results of both algorithms.		amount of discussion has been provided to explain the implementation of the algorithms and results.
	Section 4: Model Selection (20%) This section presents the detailed process to select the best model from some candidate models	The following tasks have been carried out to a basic standard and may not be fully complete: i) You have split the data as required; ii) You have explained the process to implement 10-fold CV for at least one of the algorithms to select model parameters; iii) You have reported the results of at least one algorithm; iv) You have correctly selected the best model.	The following tasks have all been carried out to a good and detailed standard: i) You have split the data as required; ii) You have explained the process to implement 10-fold CV for both algorithms to select model parameters; iii) You have reported the results of both algorithms; iv) You have correctly selected the best model.	The following tasks have all been carried out to a very good and detailed standard: i) You have split the data as required; ii) You have explained the process to implement 10-fold CV for both algorithms to select model parameters; iii) You have reported the results of both algorithms; iv) You have correctly selected the best model; v) You have correctly explained how you have chosen the best model.	The following tasks have all been carried out to an outstanding and detailed standard: i) You have split the data as required; ii) You have explained the process to implement 10-fold CV for both algorithms to select model parameters; iii) You have reported the results of both algorithms; iv) You have correctly selected the best model; v) You have correctly explained how you have chosen the best model. A significant amount of discussion has been provided to explain the implementation of the algorithms and results.
Weighting	Criteria in this assessment are weighted as indicated by the percentages presented above.				