

CMP3751M Machine Learning Assessment 2 of 2 CRG 2019 – 2020

Indicative Weighting: 50%

| Learning Outcome | Criterion | Pass | 2:2 | 2:1 | 1st |
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| <p>LO1 Critique and appraise the scope and limits of machine learning methods by identifying their strengths and weaknesses</p> <p>LO2: Using a non-trivial dataset, plan, execute and evaluate significant experimental investigations using multiple machine learning strategies</p> | <p>Section 1: Data Summary, Pre-processing and Visualisation (20%)</p> <p>This section is focused on data summary, pre-processing and visualisation.</p> | <p>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.</p> | <p>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.</p> | <p>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.</p> | <p>You have clearly described the dataset to an excellent standard, carried out 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.</p> |
| | <p>Section 2: Discussion on Selecting an Algorithm (30%)</p> <p>This section presents a significant and detailed discussion on appropriate methods of selecting an algorithm.</p> | <p>You have demonstrated a basic understanding of how to select an algorithm correctly. Your discussion and presentations are brief with little critique.</p> | <p>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.</p> | <p>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.</p> | <p>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.</p> |
| | <p>Section 3: Designing Algorithms (30%)</p> <p>This section presents the detailed process to design and implement an algorithm on a data set.</p> | <p>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</p> | <p>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</p> | <p>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.</p> | <p>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</p> |

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| | | 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. |
| | <p>Section 4: Model Selection (20%)</p> <p>This section presents the detailed process to select the best model from some candidate models</p> | <p>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.</p> | <p>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.</p> | <p>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.</p> | <p>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.</p> |
| Weighting | Criteria in this assessment are weighted as indicated by the percentages presented above. | | | | |
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