

Artificial Intelligence and Machine Learning (MMI226824) CW1 Marking Rubric

Criteria	Exceptional (80-100%) Demonstrates <i>exceptional</i> ability, skills and behaviours across specified characteristics.	Excellent (70-79%) Demonstrates <i>mostly excellent</i> ability, skills and behaviours across specified characteristics.	Good (60-69%) Demonstrates <i>overall good</i> ability, skills and behaviours across specified characteristics.	Satisfactory (50-59%) Demonstrates <i>overall satisfactory</i> ability, skills and behaviours across specified characteristics.	Marginal Fail (40-49%) Demonstrates <i>overall poor</i> ability, skills and behaviours across specified characteristics with <i>some satisfactory</i> elements.	Clear Fail (0-39%) Demonstrates <i>consistently poor</i> ability, skills and behaviours across specified characteristics with <i>limited or no satisfactory</i> elements.
Introduction and problem definition (10 marks) <i>Provides a textual overview of the data and a detailed problem statement.</i> <i>Clear explanation of why each task is a regression problem.</i>	Provides an exceptionally clear and comprehensive overview of the data and presents a detailed and insightful problem statement, demonstrating deep understanding.	Provides a clear and thorough overview of the data and presents a detailed problem statement, demonstrating strong understanding.	Provides an adequate overview of the data with a clear problem statement, meeting the basic requirements of the task.	Provides a basic overview of the data and a basic problem statement as described in the booklet, with some additional contribution but lacking depth.	Provides an incomplete or unclear overview of the data and problem statement, with some relevant content but significant omissions.	Fails to provide an adequate overview of the data or problem statement; lacks clarity and relevant content.
Data ingestion, preparation and segregation (35 marks) <i>Data ingestion, preparation steps and segregation have been included and clearly explained.</i>	Demonstrates thorough checks and cleaning, handles missing values and encoding logically yet creatively, and applies feature engineering that clearly improves model potential. Provides a well-justified strategy for splitting the data (e.g. train/test, cross-validation).	Performs correct data loading and basic cleaning, deals with missing values in a suitable manner, shows a sound approach to feature engineering (e.g. encoding/binning), and presents a clear rationale for train/test splitting.	Loads and mostly cleans the data, with some basic feature engineering. Carries out train/test splitting with a brief explanation.	Takes incomplete steps to process and clean data, implements minimal feature engineering, and gives an unclear or perfunctory splitting method.	Shows poor or inconsistent data handling, leaves missing/invalid values unaddressed, and lacks a clear strategy for splitting the data.	Fails to perform meaningful data ingestion or cleaning, conducts no feature engineering, and shows no evidence of any data splitting.
Model Training and Evaluation (40 marks) <i>Selects at least two models, including one tree-based method (e.g. Random Forest or Decision Tree). Compare baseline and optimised versions using appropriate metrics and a clear performance analysis.</i>	Chooses at least two models, both highly appropriate for the task, including one tree-based approach. Provides a strong comparison between baseline and optimised versions, using highly relevant metrics and offering thorough interpretations of results.	Selects two models that suit the data and problem, compares baseline versus optimised models, and applies the chosen metrics correctly with clear explanations.	Picks models that are mostly appropriate. Shows some effort to compare baseline and improved versions. Uses standard evaluation metrics, though the discussion is somewhat brief.	Offers an unclear or poorly justified model selection, makes little distinction between baseline and tuned models, and provides insufficient discussion of metrics.	Chooses models unsuited to the task, with no real optimisation or comparison. Employs inappropriate or missing metrics.	Fails to attempt valid modelling or evaluation. Does not provide meaningful metrics or results.

Discussion and Conclusion (15 marks) <i>Provides detailed and meaningful concluding statements.</i>	Provides exceptionally detailed conclusions for each task, with insightful interpretation of the results and thoughtful suggestions for potential improvements. The analysis demonstrates critical reflection and a deep understanding of the implications of the findings.	Provides detailed conclusions for each task, with clear interpretation of the results and suggestions for improvements. The analysis is well-thought-out and demonstrates a solid understanding of the results.	Provides general conclusions for each task, with some interpretation of the results. Suggestions for improvements are basic or implied, with minimal critical discussion.	Summarises the results for each task with little critical discussion. The suggestions for improvements are vague or minimal.	Conclusions are incomplete or lack clear interpretation of the results. No possible proposed improvements.	Fails to provide meaningful conclusions, interpretation of results, or suggestions for improvements.
---	---	---	---	--	--	--