Manchester Metropolitan University

Department of Computing and Mathematics

ASSESSMENT COVER SHEET 2024/25

Module Code and Title:	6G6Z0048 Artificial Intelligence
Assessment Set By:	John Darby and Indranath Chatterjee
Assessment ID:	1CWK100
Assessment Weighting:	100%
Assessment Title:	Coursework
Type:	Individual
Hand-In Deadline:	See Moodle
Hand-In Format and Mechanism:	Electronic .zip file, via Moodle

Learning outcomes being assessed:

LO1: Analyse a real-world problem and select an appropriate combination of algorithms, building blocks and techniques from AI to produce a solution.

LO2: Appraise and evaluate theoretical and practical issues underpinning AI and justify design choices for AI problem solving strategies.

LO3: Design, execute and evaluate an experimental plan to create and optimise a small real-world system incorporating AI techniques.

Note: it is your responsibility to make sure that your work is complete and available for marking by the deadline. Make sure that you have followed the submission instructions carefully, and your work is submitted in the correct format, using the correct hand-in mechanism (e.g., Moodle upload). If submitting via Moodle, you are advised to check your work after upload, to make sure it has uploaded properly. If submitting via OneDrive, ensure that your tutors have access to the work. Do not alter your work after the deadline. You should make at least one full backup copy of your work.

Penalties for late submission

The timeliness of submissions is strictly monitored and enforced.

All coursework has a late submission window of 7 calendar days, but any work submitted within the late window will be capped at 40%, unless you have an agreed extension. Work submitted after the 7-day late window will be capped at zero unless you have an agreed extension. See 'Assessment Mitigation' below for further information on extensions.

Please note that individual tutors are unable to grant any extensions to assessments.

Assessment Mitigation

If there is a valid reason why you are unable to submit your assessment by the deadline you may apply for Assessment Mitigation. There are two types of mitigation you can apply for via the module area on Moodle (in the 'Assessments' block on the right-hand side of the page):

- **Non-evidenced extension**: does **not** require you to submit evidence. It allows you to add a **short** extension to a deadline. This is not available for event-based assessments such as in-class tests, presentations, interviews, etc. You can apply for this extension during the assessment weeks, and the request must be made **before** the submission deadline. For this assessment, the self-certification extension is 4 days.
- **Evidenced extension**: requires you to provide independent evidence of a situation which has impacted you. Allows you to apply for a longer extension and is available for event-based assessment such as in-class test, presentations, interviews, etc. For event-based assessments, the normal outcome is that the assessment will be deferred to the summer reassessment period.

Further information about Assessment Mitigation is available on the dedicated Assessments page.

Plagiarism

Plagiarism is the unacknowledged representation of another person's work, or use of their ideas, as one's own. Manchester Metropolitan University takes care to detect plagiarism, employs plagiarism detection software, and imposes severe penalties, as outlined in the Student Code of Conduct and Academic Misconduct Policy. Poor referencing or submitting the wrong assignment may still be treated as plagiarism. If in doubt, seek advice from your tutor.

As part of a plagiarism check, you may be asked to attend a meeting with the Module Leader, or another member of the module delivery team, where you will be asked to explain your work (e.g. explain the code in a programming assignment). If you are called to one of these meetings, it is very important that you attend.

Use of generative AI

The use of generative AI is permitted in this assessment, so long as it is used in accordance with the instructions provided in the 'Are you allowed to use AI in assessments?' section of the AI Literacy Rise Study Pack. Essentially: AI can be used as a tool to help you learn, but not as a tool to do your assessment for you.

If you are unable to upload your work to Moodle

If you have problems submitting your work through Moodle, you can send your work to the Assessment Management Team using the Contingency Submission Form. Assessment Management will then forward your work to the appropriate person for marking. If you use this submission method, your work must be sent **before the published deadline**, or it will be logged as a late submission. Alternatively, you can save your work into a single zip folder then upload the zip folder to your university OneDrive and submit a Word document to Moodle which includes a link to the folder. **It is your responsibility to make sure you share the OneDrive folder with the Module Leader, or it will not be possible to mark your work.**

Assessment Regulations

For further information see the Undergraduate Assessment Regulations on the Assessments and Results information pages

Formative Feedback:	*Opportunities to discuss progress on the assessment will be provided during lectures, labs, and by contacting tutors directly during the semester. There will also be a formative submission enabling you to get written feedback and indicative marks.*
Summative Feedback:	*A final summative mark and a completed marksheet containing highlighted criteria and feedback will be made available via Moodle. See the attached specification for more details.*

1CWK100 (unit weighting: 100%)

1. Challenge

The challenge in this assignment is to use Python and appropriate supporting packages to undertake a supervised learning investigation based on a previously unseen medical dataset: **pneumonia_raw.csv**. The dataset contains a set of simple numerical measurements taken from patients' chest x-rays by non-clinical hospital staff, and a set of subsequent pneumonia diagnoses made by clinical staff. The aim is to establish whether supervised learning could allow non-clinical staff to make fast and reliable pneumonia diagnoses, without patients having to wait for review by clinical staff.

2. Resources

A **1CWK100.zip** file is available on Moodle, with the dataset and a template .ipynb file. You should edit the .ipynb file using Google Colab, which will allow you to work from any machine with an internet connection (https://colab.research.google.com/).

3. Support

All the challenges in this assignment are supported by lectures and lab tasks on the unit. **You are encouraged to reuse and extend code from the weekly lab tasks as the basis for your assignment submission. Overlap between your submission and the unit materials is not a problem.**

Help is always available in your weekly labs, or by contacting your tutors directly. However, it is also expected that some degree of self-directed study will be required in order to obtain the higher marks (see also Section 7).

4. How to submit your work

Once you're ready to submit, re-compress the 1CWK100 folder containing the template and dataset as a .zip file (no other compression formats) and upload it to Moodle. Further guidance is given in the template.

5. Authorship

The work you submit for this assignment is expected to represent your own efforts to apply and extend the code examples shared in the weekly labs.

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Be careful when giving/accepting help to/from friends, and make sure that any other sources of information, ideas or resources (including code, text, images, etc.) are properly cited and referenced within your notebook. You should use **Cite Them Right Harvard** for the formatting of any citations/references (guidance available via the library pages here).

6. Feedback

Opportunities for discussion and verbal feedback will be made available through the various tutor-led activities during the teaching semester. This will include opportunities for Q&A in the timetabled on-campus activities, or by contacting unit staff directly (see Moodle for contact details and office hours). We will also have a formative feedback exercise during the semester to allow you to get written feedback on your work, including suggestions for improving it, and an indicative overall mark.

Your final summative feedback sheet for this assignment will consist of a copy of the marking criteria set out in this specification document (see Section 7) with highlighting added to indicate your level of performance, written feedback from a member of the unit staff, and a final stepped mark for the overall assignment out of 100. The feedback sheet will be returned to you via Moodle.

7. Marking criteria

Mark Steps	Criteria	Indicative Language
95-100% (Outstanding) 90% (Very high first) 85% (High first) 78% (Mid first) 75% (Low first) 72% (Marginal first)	**As below (62-68% band)**, but the notebook has been extended to critically analyse the following claims from a colleague: "*Instead of hospital staff having to extract numerical measurements from x-rays manually, we can classify the raw x-ray images directly; it should be possible to get improved performance and save on staff time, without any downsides*". Analysing these claims in any depth will likely require some self-directed study. Use as many extra text cells and code cells as you need to present your findings and give your thoughts on your colleague's claims. Make sure you properly cite and reference any resources you draw upon (e.g., datasets, experimental findings, images, diagrams, code listings, etc.) – see also Section 5.	Persuasive, sophisticated, original, reflective, ambitious, meticulous, critical, convincing, unexpected
68% (High 2.1) 65% (Mid 2.1) 62% (Low 2.1)	**As below (52-58% band)**, but the notebook has been extended to consider some relevant ensembles (e.g., using bagging to build an ensemble of Decision Trees) and there is a genuine effort to recover the best possible performance; some further steps are taken to improve on the basic recipe (e.g., using k-fold cross validation, calculating alternative performance metrics, etc.); relevant text cells are extended to include justifications for all changes; final conclusion can reasonably be considered meaningful and robust	Fluent, thorough, analytical, precise, rigorous
58% (High 2.2) 55% (Mid 2.2) 52% (Low 2.2)	**As below (42-48% band)**, but the notebook has been extended to consider some relevant hyperparameters (e.g., minimum parent size for a Decision Tree classifier); some steps are taken to improve on the basic recipe (e.g., data cleaning, using stratified sampling, etc.); relevant text cells are extended to include some justification for these changes	Clear, confident, consistent, thoughtful, accurate, careful, congruent, coherent
48% (High third) 45% (Mid third) 42% (Low third)	**Submission:** the template .zip has been used and the submission instructions have been followed correctly (see Section 4) **Code cells:** A basic holdout recipe is used to calculate a performance metric for some appropriate models, using the raw dataset (e.g., percentage accuracy is calculated for a Decision Tree classifier evaluated using a shuffled 60:40 train/test holdout split of the dataset) **Code commenting:** code cells are well commented throughout **Text cells:** short text cells are used briefly to summarise what each code cell does, and any relevant findings it produces; a final text cell concludes the investigation by summarising the key findings	Satisfactory, sufficient, adequate, descriptive
38% (Marginal Fail) 35% 32%	**As above (42-48% band)**, but at least one key recipe step or other important piece of information is missing (e.g., no dataset splitting, *or* no performance metric calculation, *or* insufficient code comments)	Incomplete, inadequate, inconsistent, derivative, contradictory, superficial, irrelevant, limited
28% (Clear Fail) 25% 22%	**As above (32-38% band)**, but at least one further key recipe step or other important piece information is missing (e.g., no dataset splitting *and* insufficient code comments)	Erroneous/wrong, missing, extremely limited, inappropriate, insufficient, incoherent, unstructured; absent/none, lacking, formless, detrimental
18% (Very Poor Fail) 15% 12% 8% 5% 2%	The investigation and/or the record of its development is erroneous/wrong/missing or inappropriate (e.g., fundamentally incorrect approach)	
0% (Non submission)	There is no submission or the .ipynb file doesn't develop the supplied template	