MANCHESTER METROPOLITAN UNIVERSITY
School of Computing, Mathematics & Digital Technology

ASSIGNMENT COVER SHEET

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Unit:	Code: 6G7Z1003
Assignment set by:	Luciano Gerber/Ryan Cunningham
Verified by:	
Moderated by:	
Assignment number:	1PORT50
Assignment title:	Portfolio
Type: (GROUP/INDIVIDUAL)	100% Individual
Hand-in format and mechanism:	Submit via Moodle
Deadline:	6/4/2020

Learning Outcomes Assessed:

➢ Critically analyse, evaluate and discuss current and emerging trends in high performance computing and big data

➢ Apply and demonstrate an understanding of techniques and algorithms for feature extraction, dimensionality reduction, data mining and AI to various big data problems.

➢ Develop, implement and evaluate parallel and distributed system models for application development in high performance computing and big data

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It is your responsibility to ensure that your work is complete and available for assessment by the date given on Moodle. If submitting via Moodle, you are advised to check your work after upload; and that all content is accessible. Do not alter after the deadline. You should make at least one full backup copy of your work.

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Penalties for late hand-in: see Regulations for Undergraduate Programmes of Study: http://www.mmu.ac.uk/academic/casqe/regulations/assessment.php. The timeliness of submissions is strictly monitored and enforced.

Exceptional Factors affecting your performance: see Regulations for Undergraduate Programmes of Study :
http://www.mmu.ac.uk/academic/casqe/regulations/assessment/docs/ug-regs.pdf

Plagiarism: Plagiarism is the unacknowledged representation of another person's work, or use of their ideas, as one's own. MMU takes care to detect plagiarism, employs plagiarism detection software, and imposes severe penalties, as outlined in the Student Handbook (http://www.mmu.ac.uk/academic/casqe/regulations/docs/policies_regulations.pdf and Regulations for Undergraduate Programmes (http://www.mmu.ac.uk/academic/casqe/regulations/assessment.php). Bad

referencing or submitting the wrong assignment may still be treated as plagiarism. If in doubt, seek advice from your tutor.

Assessment Criteria:	Indicated in the attached assignment specification.
Formative Feedback:	Via discussion on draft work in lab sessions and office hours.
Summative Feedback format:	See assessment grid provided as part of this assignment. Summative feedback will be provided individually on Moodle.
Weighting:	This Assignment is weighted at 50% of the total unit assessment.

1. Portfolio Assessment

The portfolio assessment consists of two elements:

1. **TensorFlow Task** (50%): A substantial image classification exercise on a publicly-available data, using Python and TensorFlow. The code, and short reports on experimentation and explainability, must be submitted via Moodle.

2. **Spark Task** (50%): A substantial exercise in using the Apache Spark API (in Python) and Hadoop to process a given dataset. The code must be submitted on Moodle, along with a short report explaining the design of the system and its implementation.

Please see the specification and useful resources for both tasks in the assessments section on Moodle.

5. Marking Grids

The criteria used in assessing the TensorFlow/Spark solutions and written reports (individual submissions) are detailed in the grid below.

| | | Fail | Fail + | CF | Pass | Merit | Distinction | Distinction + |
		0%-19%	20%-44%	45%-49%	50%-59%	60%-69%	70%-85%	86%-100%
TensorFlow/Spark Solutions	Overall	The work is missing major elements or contains serious errors.	Some elements of the brief have not been addressed. The work is superficial or limited.	An adequate attempt has been made and most elements of the brief have been addressed at a limited level.	The project represents a coherent solution to the assignment brief and demonstrates confidence in the development of parallel computing solutions.	The project addresses the brief rigorously and thoroughly and demonstrates fluency in the development of parallel computing solutions.	The project represents a sophisticated and original solution, and shows evidence of reflective practice. The project addresses the brief rigorously and thoroughly and demonstrates fluency in the development of parallel computing solutions.	The project represents a creative and authoritative solution, and shows evidence of reflective practice. The project addresses the brief rigorously and thoroughly and demonstrates fluency in the development of parallel computing solutions.
	Analysis and Design	Little or no analysis of the problem, with inappropriate or no design presented.	Limited or superficial analysis of the problem. Design is incomplete or inadequate and fails to address the brief.	Adequate analysis of the problem . Design is adequate.	Clear and careful analysis of the problem leading to a coherent design which fully addresses the brief.	Thorough and careful analysis of the problem and a clear design which fully addresses the brief.	Sophisticated critical analysis of the problem leading to a convincing design which meticulously addresses the brief.	Sophisticated and insightful critical analysis of the problem leading to a creative and convincing design which meticulously addresses the brief.

	Evaluation	Little or no evaluation of the outcomes of the exercise.	Inappropriate, incoherent or erroneous evaluation of the exercise.	Some critical evaluation of the exercise,	A clear, careful and confident evaluation which draws largely accurate conclusions.	A rigorous and precise critical evaluation of the exercise, which is fluently presented.	A sophisticated and meticulous critical evaluation of the exercise, which is convincingly presented, showing evidence of critical reflection.	An insightful and authoritative evaluation of the exercise , which is convincingly presented, showing evidence of critical reflection.
	Implementation	The implementation fails to compile or function. The source code is unclear, without comments and clearly named variables and functions.	The implementation contains major errors. The source code is unclear, without comments and clearly named variables and functions.	The implementation contains some significant errors. The source code is unclear, without comments and clearly named variables and functions.	The implementation is functional. The source code contains comments. Variables and functions have descriptive names.	The implementation demonstrates fluency in the programming language, frameworks and libraries, with well-chosen programming constructs. The code is well laid out and adheres rigorously to good coding and documentation practices. Comments are informative and at an appropriate level.	The implementation is a concise expression of the design. The implementation demonstrates fluency in the programming language, frameworks and libraries, with well-chosen programming constructs. The code is well laid out and adheres rigorously to good coding and documentation practices. Comments are informative and at an appropriate level.	The implementation is a concise and elegant expression of the design. The implementation demonstrates fluency in the programming language, frameworks and libraries, with well-chosen programming constructs. The code is well laid out and adheres rigorously to good coding and documentation practices. Comments are informative and at an appropriate level.

Written/Report Elements	Overall	Communication of work is unclear and inappropriate to a defined audience and does not use appropriate strategies or media	Communication of work is unclear and inappropriate to a defined audience and does not consistently use appropriate strategies or media	Communication of the outcomes of their work is unclear and confused and does not consistently use appropriate strategies or media	The outcomes of their work are presented clearly and appropriately to a defined audience using a range of strategies and media	The outcomes of their work are presented confidently and coherently to a defined audience using a range of appropriately selected strategies and media	The outcomes of their work are presented convincingly and fluently to a defined audience using an interesting range of appropriately selected strategies and media	The outcomes of their work are presented creatively and persuasively to multiple audiences using a wide range of appropriately selected strategies and media
	Content	Most required elements of the Report are missing	Some required elements of the Report are missing	One or two required elements of the Report are missing	All of the required elements of the Report are included with some lacking in detail	All of the required elements of the Report are included in detail	All of the required elements of the Report are included in meticulous detail	All of the required elements of the Report are included in meticulous and authoritative detail
	Structure	The Report is devoid of meaningful structure	The Report is poorly structured and difficult to follow	The Report is lacking in structure and difficult to follow in places	The Report has a good basic structure and flow	The Report is well structured and flows effectively	The Report has a strong structure and flows very well	The Report has a strong structure and flows elegantly
	Harvard referencing technique	Work does not implement the required referencing technique	Limited implementation of the required referencing technique	Work partially implements the required referencing technique	Work adequate implements the required referencing technique	Work thoroughly implements the required referencing technique	Work rigorously implements the required referencing technique	Work meticulous implements the required referencing technique