UNIVERSITY of BRADFORD

Module Descriptor

Module Details	
Module Title	Big Data Visualisation (PG)
Module Code	COS7046-B
Academic Year	2022/3
Credits	20
School	Department of Computer Science
FHEQ Level	FHEQ Level 7

Contact Hours	
Type	Hours
Laboratories	24
Lectures	24
Directed Study	152

Availability	
Occurrence	Location / Period
BDA	University of Bradford / Semester 1

Module Aims

The aim of this module is to highlight real-life issues surrounding Big Data and the importance of meaningful visualisation to help the understanding and interpretation of big data at a glance, by showing (visualising) trends and patterns that arise from the data. Efficient Visualisation is an important step in the design of reliable AI systems, as it improves our understanding of the relevant data. Techniques for the efficient processing of data to improve their clarity and significance are also covered in this module.

Outline Syllabus

(1) Visualization techniques and user requirements;
(2) Analysis techniques to critique examples of visualizations;
(3) Interpretation of multidimensional, big and complex data formats;
(4) Application of data visualisation to real-life problems;
(5) Knowledge extraction from big data using data visualizations.

Learning Outcomes	
Outcome Number	Description
LO1	Demonstrate successful specialisation in the visualization of real-life data sets and the practical applications associated with them.
LO2	Develop advanced skills for the processing of Big Data and the generation of meaningful visual demonstrations.
LO3	Critically evaluate and apply big data techniques using software such as Apache Spark and Python.
LO4	Develop advanced understanding of the different visualization techniques and their implementation.
LO5	Work on real-life problems by designing, implementing, and evaluating intelligent software solutions and applications.

Learning, Teaching and Assessment Strategy

The delivery of the module will consist of lectures and lab classes supplemented by students own lab work and directed study. Lectures will be recorded and made available to students afterwards wherever possible.

Formal lectures will outline the theoretical principles of data visualisation. The coursework will involve students in advanced real-life problems, which requires them to develop, implement and evaluate practical visualisation of real-life data sets.

Assessment is through 2 formally submitted assignments of 1500 words (or equivalent) during the semester, drawing on the content of the units studied. Supplementary assessment if required is as original.

Mode of Assessment			
Type	Method	Description	Weighting
Summative	Coursework - Written	Exercises on the development of a visualisation solution to a real-life problem (1500 words or equivalent)	50%
Summative	Coursework - Written	Exercises on the development and creation of a Big Data visualisation system (1500 words or equivalent)	50%

Reading List

To access the reading list for this module, please visit https://bradford.rl.talis.com/index.html

Please note:
This module descriptor has been published in advance of the academic year to which it applies. Every effort has been made to ensure that the information is accurate at the time of publication, but minor changes may occur given the interval between publishing and commencement of teaching. Upon commencement of the module, students will receive a handbook with further detail about the module and any changes will be discussed and/or communicated at this point.

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