Australian Government

ICTDAT503 Use unsupervised learning for clustering

Release: 1

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Modification History

Release	Comments
Release 1	This version first released with ICT Information and Communications Technology Training Package Version 6.0.

Application

This unit describes the skills and knowledge required to cluster data extracts from big data following unsupervised machine learning methodologies and report on the findings.

It applies to individuals who work in roles including, data analysts, data scientists, machine learning engineers, developers and programmers, and are responsible for data mining and machine learning activities with big data within medium to large organisations.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Data analytics

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
Elements describe the essential *outcomes.*	*Performance criteria describe the performance needed to demonstrate achievement of the element.*
1.Determine data clustering requirements	1.1 Research organisation's need for data clustering and define problem, objective and outputs 1.2 Determine required machine and input data set according to task requirements 1.3 Define evaluation protocol and accepted measure of success 1.4 Develop and document required benchmark model
2. Prepare data	2.1 Collect data according to task requirements 2.2 Evaluate data quantity, completeness and alignment according to task requirements 2.3 Transform and format data according to specifications 2.4 Finalise data preparation according to task requirements

ELEMENT	PERFORMANCE CRITERIA
3. Cluster data	3.1 Input raw data according to task requirements 3.2 Run required algorithm and adhere to required processing time frame 3.3 Obtain output reports and determine completeness of task according requirements
4. Finalise data clustering tasks	4.1 Analyse data report and determine clustering tasks have been completed according to task requirements 4.2 Interpret, summarise and document findings 4.3 Communicate findings to required personnel and seek and respond to feedback 4.4 Lodge documentation according to task requirements and finalise task activities according to organisational requirements

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

SKILL	DESCRIPTION
Numeracy	• Uses mathematical formulae to calculate required measurements, determine values and articulate numerical findings
Oral communication	• Uses listening and questioning techniques to seek and respond to feedback
Reading	• Analyses technical, manufacturer and organisational documentation to determine and confirm job requirements
Writing	• Prepares complex documentation detailing benchmark model and findings using relevant language to convey explicit information, requirements and recommendations
Planning and organising	• Uses a formal, logical planning processes together with an increasingly intuitive understanding of context
Problem solving	• Uses nuanced understanding of context to recognise anomalies and subtle deviations to normal expectations, focusing attention and remedying problems as they arise
Self-management	• Takes full responsibility for identifying and considering relevant organisational protocols and requirements • Uses systematic processes, setting goals, gathering required information and identifying and evaluating options against agreed criteria

SKILL	DESCRIPTION
Technology	• Identifies principles, concepts, language and practices associated with the digital world

Unit Mapping Information

No equivalent unit. New unit.

Links

Companion Volume Implementation Guide is found on VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=a53af4e4-b400-484e-b778-71c9e9d6aff2