Data Scientist

Data scientists apply advanced analytics techniques and scientific principles to extract valuable information from data for business decision-making, strategic planning and other uses.

Data science is an interdisciplinary field that extracts value from typically very large structured and unstructured data collected from various sources. It combines skills from statistics, Artificial Intelligence (AI), machine learning and deep learning (on an ethical basis), and data analysis and software engineering.

Data Scientists carry out the activities of preparing data for analysis, including cleansing and manipulating the data to perform advanced data analysis. They will apply advanced algorithms, build and deploy sophisticated machine learning models, and identify patterns to derive actionable insights and tailored analytical solutions that enable business leaders to draw informed insights.

Data Scientists are responsible for automating processes, bridging the steps between undertaking analysis and machine learning and establishing sustainable analytical processes. They may prepare data visualisations and representations to share meaningful insights from data and support evidence-based policy decisions.

At a glance

- Deep learning
- Data Analysis
- Statistics
- Data Modelling
- Artificial Intelligence
- Quality, governance, and risk management
- Data Mining

Standards & Technologies

Artificial Intelligence	Machine Learning
Cloud Services	Predictive Modelling and Analysis
ModelOps (MLOps)	Distributed Systems & Processing
Coding / Computer Languages	

Potential Domain Interactions

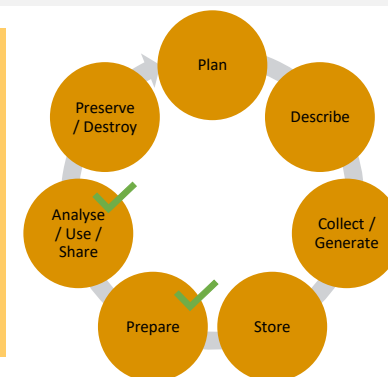|	
Statistics	Computer Science
Natural Language Processing	Bioinformation
Data Modelling	Machine Learning
Information Technology / Digital	Data Management

Data Lifecycle

Green ticks indicate where this persona may have key interactions across the data lifecycle

Data Scientist

Level 1 | Foundation

Applying the appropriate existing analytics technique to discover patterns, trends and relationships in data and assist in the development of classification, prediction and optimisation models to derive tailored analytical solutions.

Carry out testing and evaluate the performance of modelling solutions.

Deploy existing analytical solutions into production and provide support for the solutions, including periodic evaluation of performance.

Employ data modelling techniques to support business needs.

Communicate findings, which can be translated into business value, using multi-faceted reports and visualisations.

Collaborate with other data professionals to support process improvements.

Understand and support client expectations.

Understand basic automation processes.

Collaborate with business owners and other relevant stakeholders to understand and design experiments.

Apply analytical solutions that meet the needs of business owners and relevant stakeholders.

Level 2 | Intermediate

Adapting existing techniques to the problem space to discover patterns, trends and relationships in structured and unstructured data and develop classification, prediction and optimisation models to derive tailored analytical solutions and actionable insights.

Contribute to design, implement and evaluate testing of the performance of modelling or tailored analytical solutions.

Develop and deploy analytical solutions into production and provide support and maintenance for the solutions, including periodic evaluation of performance.

Employ data modelling techniques, develop analytical solutions and contribute to recommendations to support business needs.

Communicate findings, which can be translated into business value, using multi-faceted reports and visualisations, with an understanding of stakeholder requirements.

Collaborate with other data professionals to support process improvements, recommend system modifications, and contribute to data governance and ethics policies.

Understand and manage client expectations to effectively deliver technical, data-driven solutions and insights.

Establish sustainable analytical processes by automating processes.

Contribute to experiments to test the performance of alternative analytical methods to enable selection of best options.

Contribute to the design of analytical solutions that meet the needs of business owners and relevant stakeholders and are well utilised.

Level 3 | Advanced

Develop new or adapt existing algorithms to overcome limitations to existing techniques for a specific problem space to discover complex patterns, trends and relationships in structured and unstructured data and design classification, prediction and optimisation models to derive tailored analytical solutions and actionable insights that deliver business value.

Lead design, implement and evaluate testing of the performance of modelling or tailored analytical solutions.

Develop, manage and deploy complex multi-staged analytical solutions into production, ensuring evaluation of performance and refinement in iterations.

Employ advanced data modelling techniques, develop analytical solutions, and identify recommendations to support business needs.

Effectively communicate findings, which can be translated into business value, using multi-faceted reports and tailored visualisations, with a focus on the strategic environment and what stakeholders will need in the future.

Collaborate with other data professionals to identify new trends and innovations, process improvements, recommend system modifications, and contribute to strategies and data governance and ethics policies.

Understand and manage client expectations, influencing key stakeholders to develop and implement advanced analytical solutions that are aligned with organisational requirements and goals.

Establish innovative and sustainable analytical processes by automating processes.

Design and lead experiments to test the performance of alternative analytical methods to enable selection of best options.

Consider the strategic environment and design creative solutions that not only meet the current needs of business owners and relevant stakeholders but also explores a future desired state.

Level 1 | Foundation

APS DCF		SFIA	
① STS	① SCM	③ DATS	② PROG
① SPC	① RSC	② VISL	② DTAN
① EXP	① SMX	③ MLNG	
① USE			

Level 2 | Intermediate

APS DCF		SFIA	
② STS	② SCM	④ DATS	② PROG
① SPC	② RSC	③ VISL	③ DTAN
② EXP	① IMP	④ MLNG	③ GOVN
① SMX	① USE		

Level 3 | Advanced

APS DCF			SFIA	
③ STS	③ SCM	② SMX	⑤ DATS	③ PROG
② SPC	③ RSC		④ VISL	④ DTAN
③ EXP	② IMP		⑤ MLNG	④ DATM
② VAL	② USE		④ GOVN	

Select the boxes for more information.

APS DCF = Australian Public Service Data Capability Framework   *SFIA = Skills Framework for the Information Age*