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| A free resource provided by Our Community’s [Innovation Lab](https://www.ourcommunity.com.au/innovationlab)Proudly supported by Equity TrusteesLast updated September 2022This template was designed for you to edit to suit your organisation’s needs. Replace placeholders with your own content. As you complete each section, delete anything that isn’t relevant, as well as instructions (written in blue text, like this). |

**Data Engineer**

**Position Description**

**About us***(Include here an overview of your organisation)*

{Organisation Name} is a not-for-profit organisation that provides …

**About the role***(Include here an overview of projects this role may be part of and an overview of key responsibilities)*

State the general nature, level and purpose of the job and provide a brief description of its duties and responsibilities. This section will be used for the job advertisement. It may be easier to write the general summary after completing other sections of the job description. For example:

We are looking for a savvy Data Engineer to join our growing team of analytics experts to work on some of the most interesting and challenging problems {Organisation Name} is facing.

Reporting to {Manager Title} you will be working with data scientists, analysts, engineers and product managers on large, small and varied business problems. You will be an experienced data pipeline builder and data wrangler who enjoys optimising data systems and building them from the ground up. In this role you will support our {list all roles that apply, e.g. software developers, database architects, data analysts, data scientists} on data initiatives and will ensure optimal data delivery architecture is consistent throughout ongoing projects.

or

Reporting to {Manager Title} you will be responsible for designing and building systems that collect, manage, and convert raw data into usable information for data scientists and business analysts to interpret. The ultimate goal is to make data accessible so that {Organisation Name} can use it to evaluate and optimise performance. You will be excited by the prospect of optimising or even re-designing {Organisation Name} data architecture to support our next generation of products and data initiatives.

## Main activities / key accountabilities

*(Include here a list of key duties or tasks that the position will be responsible for)*

Below is a list of example duties/tasks/activities you might find useful. They are grouped together by type – keep only those that most suit your position.

#### Technical

* Analyse data into meaningful, actionable insights to allow improved decision making for the {Organisation Name} and our customers
* Build the infrastructure required for optimal extraction, transformation, and loading of data (ETL) from a wide variety of data sources
* Build the infrastructure required for optimal extraction, transformation, and loading of data from a wide variety of data sources using SQL and {cloud computing platform in use, e.g. AWS, Google Cloud, Microsoft Azure}
* Analyse, tune, optimise and develop ETL processes for new and existing data sources
	+ - * Create and maintain optimal data pipeline architecture
* Assemble large, complex data sets that meet functional / non-functional business requirements.
* Identify, design, and implement internal process improvements: automating manual processes, optimising data delivery, re-designing infrastructure for greater scalability, etc.
* Build optimised data pipelines and ingestion patterns with considerations for security and data governance
* Build data frameworks and a real-time data ecosystem to provide interactive customer experiences that will feed data into other systems via multiple interface types
* Develop automated data quality frameworks
* Create real-time analytical capability to power experiences within a mobile app
* Develop, deploy, and operate scalable data pipelines, analysis of large-scale data sets using a range a cloud-based technologies

#### Business acumen, analysis and reporting

* Participate in the creation of test plans, the execution of testing and the validation of test results
* Connect data to reports and visualisation dashboards using Power BI, Tableau, or legacy toolsets
* Design data warehouse facts and dimensions
* Alongside our data analyst, guide and assist developers in the build of the data models
* Define and publish the data architecture standards for all applications and infrastructure across the portfolio
* Identify, design, and implement internal process improvements: automating manual processes, optimising data delivery and re-designing infrastructure for greater scalability
* Build analytics tools to provide actionable insights into client acquisition, operational efficiency, and other key business performance metrics
* Work with data and analytics experts to strive for greater functionality in our data systems
* Build and maintain diagrams and documentation related to data utilisation
* Assist data scientists with the deployment and delivery of machine learning solutions
* Build processes supporting data transformation, data structures, metadata, dependency, and workload management

#### Project management

* Work with stakeholders including the Executive, Product, Data and Design teams to assist with data-related technical issues and support their data infrastructure needs
* Work with data and analytics experts to strive for greater functionality in {Organisation Name} data systems
* Assist functional analysts to diagnose the impact of potential system changes on reports
* Work with Business Analysts and Solution Architects to produce simple and supportable integration designs that conform with {Organisation Name} standards and principles
* Undertake effective technical implementation of integration solutions in conjunction with Solution Architects to meet business requirements
* Manage project timeline and communicate progress to key stakeholders
* Assist in the creation of the strategic plan, designing and managing the Data Warehouse and associated governance processes
* Lead the processes of data cleansing and auditing
* Define problem statements and identify opportunities for improvement
* Participate in system improvement initiatives to optimise the business processes and practices in data integration solutions and analytics
* Identify, analyse, and resolve data quality problems
* Ensure {Organisation Name} data is separated and secure at all times
* Ensure projects are delivered within timelines and budget requirements

#### Collaboration and relationship management

* Provide primary operational support to the business for application integration ensuring that the solutions continue to meet business integration requirements
* Foster collaboration across teams, functions, regions, and divisions using a range of influencing and negotiation strategies to establish mutually beneficial partnerships with key stakeholders
* Collaborate with internal team members to fully understand business requirements and desired business outcomes
* Work closely with key stakeholders to clearly define and understand reporting and data requirements
* Work closely with key stakeholders to present findings, insights, and recommendations as the subject matter expert
* Provide operational support and troubleshooting

Key selection criteria

*(Include here any formal qualifications, technical expertise, licences, knowledge, skills and experience required to undertake this position)*

### Essential & Desirable

Identify the minimum set of criteria **required** to competently perform the job duties. A long list of essential requirements may deter some candidates (particularly those who face other barriers such as gender or racial inequality).

Please complete this section in bullet form. Below is a list of example criteria you might find useful. Select the criteria that most suit your position, as these will be used to screen applicants throughout the selection process.

#### Education/Experience

Include a suggested number of years of related experience; e.g. “Previous experience in healthcare or health insurance environment required (usually three to five years)” or “Five to seven years of project management experience”.

* 3 years’ experience in a Data Engineer role, with a Graduate degree in Computer Science, Statistics, Informatics, or Information
* A tertiary qualification in Business or IT or related discipline
* Degree in Computer Science or Data and Analytics
* 3+ years of experience in cloud-based data engineering
* 3 years’ experience in business analytics and analytical tools with at least 2 years’ experience in developing data warehousing infrastructure, managing data, business processes and system experience
* Minimum 5 years of experience in Data Warehouse, Business Intelligence, and Analytics
* Demonstrated IT experience as a data or software engineer, including experience as an integration developer

#### Technical Skills/Knowledge

Be clear about what tools you are already using in the organisation or would like to adopt. It is important to consider the sustainability of data solutions should this person exit your organisation.

The clarity of this section is especially important for Data Engineer roles. Their skills/knowledge are very tool specific. As such be selective in your use of the below prompts and ensure your final position description does not over-specify.

* {Advanced} working SQL knowledge and experience working with relational databases, query authoring (SQL) as well as a familiarity with a variety of databases
* Deep understanding of data engineering, ideally having worked with traditional data warehouse solutions but having made the transition to cloud-based real-time big data platforms
* Data warehouse experience including knowledge of data warehouse tables, stored procedures, and SQL concepts
* Experience building and optimising ‘big data’ pipelines, architectures, and data sets
* Proven experience supporting and developing data pipelines, linkage and updates as required for analysis and reporting
* Demonstrated experience developing tools for data cleaning, data wrangling and quality assurance
* Experience performing root-cause analysis on internal and external data and processes to answer specific business questions and identify opportunities for improvement
* A record of achievement manipulating, processing, and extracting value from large, disconnected datasets or legacy systems
* Familiarity of data modelling and data analysis/manipulation would be advantageous
* Broad and in-depth experience with {Java, Python, Bash, TSQL} to build modern applications.
* Microsoft SQL Server experience (SQL Administration skills, strong T-SQL skills, including stored procedures and CDC)
* Proven experience working with cloud solutions, ideally with Azure utilising data factory and data bricks
* Technical experience and knowledge in data management related to Cloud, Data Warehousing, Analytics and/or Business Intelligence
* Familiarity with solutions for Business Intelligence (Power BI, Tableau, etc.) and Analytics (R, Python, etc)
* Proven experience in Tableau, Snowflake, SQL and data ETLs
* Working knowledge of public and private cloud environments
* Data-modelling and information classification expertise at an enterprise level
* Demonstrated experience in report / dashboard development using cloud-based reporting and analytics tools (e.g. Power BI)
* Experience supporting the development and automation of internal reporting

#### Business/Communication Skills

* Strong project management and organisational skills
* Proven record managing projects and a small team for the successful delivery of business outcomes
* Proven ability to identify and translate business problems into technical requirements, along with designing and developing data solutions, including data warehouse design and development
* A solid understanding of data governance practices and methodologies
* Experience supporting and working with cross-functional teams in a dynamic environment
* Experience engaging with internal stakeholders and analysts to develop data requirements
* A record of achievement supporting data story conversion through enhanced visualisation and self-service analysis tools
* Experience working in an agile environment
* Commercially savvy with exceptional analytical and conceptual thinking skills
* Strong analytic skills related to working with unstructured datasets
* Familiarity with a variety of testing and QA approaches to ensure delivery quality
* Strong communication skills and attention to detail to deliver efficient and effective results to internal customers, to enable them to achieve commercial outcomes
* Demonstrated interpersonal communication skills and the ability to work as a member of a team
* Strong written communication skills
* Strong problem solving and analytical skills
* Ability to work collaboratively with technical and business teams
* An ability to work flexibly and adaptively in a complex environment with multiple stakeholders

Personal qualities

*(Include here other qualities or abilities that will make a person successful in this role)*

At a personal level you will:

* Have a can-do attitude and enjoy interacting with a broad range of stakeholders, customers or clients.
* Have a strong work ethic and manage priorities effectively.
* Be trustworthy and reliable – you always do what you say you will do.
* Be proactive and a strategic thinker.
* Be able to juggle multiple tasks and set own priorities.
* Be an engaged listener.
* Be naturally curious and passionate about data and research.
* Have a strong desire to learn new skills and improve yourself.
* Be a committed collaborator with a strong desire to obtain the best results.
* Have a keen interest in making data tell a story.
* Pride yourself on exceeding expectations, no matter the task at hand.
* Have a strong eye for detail, ability to think critically and question results, and a passion for quickly delivering results.
* Proactively keep people informed about the status of your projects and highlight any issues early that may impact their delivery.
* Have a keen interest in the development of not-for-profit entities and social enterprises.

**Other relevant information**

*(Include here all other important information or requirements of your organisation’ such as citizenship requirements, police checks etc)*

Our office is located at …

Our working from home policy …

This role can be structured as a full-time or part-time position. We welcome parents returning to the workforce and would be happy to consider a job share arrangement.

Some intra and interstate travel may occasionally be required.

The successful candidate:

* must be an Australian citizen, permanent resident or hold a valid work permit or visa.
* may be required to obtain Police Check, Working with Children Check ….
* will be subject to a probationary period of three (3) or six (6) months.

In addition to the suggestions above, consider the following:

* For paid roles, include job grade, salary and direct reports. To determine appropriate salary ranges for a Data Engineer, it may be worth consulting the [ICT Professionals Salary Report](https://scientists.professionalsaustralia.org.au/Engineers/News/ICT_Employment_and_Remuneration_Report.aspx) in conjunction with the [SFIA Skills Framework](https://sfia-online.org/en/sfia-8/skills/data-engineering) and [Pro Bono Salary Survey](https://probonoaustralia.com.au/salary-survey/).
* For consultant/outsourced roles, what will be the duration and indicative rate? Do they need to bring their own equipment?
* For volunteer roles, what will they gain from the role? For example, what skills/experience, and what positive impact will be made? Furthermore, you should be transparent about the possibility of paid work afterwards.