Data Analyst

ROLE OVERVIEW

A Data Analyst is responsible for some or all aspects of the collection, processing, validating, and interpreting raw data into digestible materials to support organizational or client objectives.

You are expected to maintain a working knowledge of statistical methods and techniques consistent with best practices and industry standards.

Data Analysts work in a variety of different sectors for various clientele, providing expert analysis of complex information with the goal of supporting organizational initiatives. A Data Analyst is expected to apply different algorithms and IT tools as required to parse data. You may prepare reports, dashboards, database, figures, or other publications to support the communication of complex information to various stakeholders.

Exceptional analytical skills and attention to detail are core skills for a Data Analyst. Successful analysts use an iterative approach to problem solving, understanding the importance of validating, and verifying results to ensure accuracy. Although a technical skill set is highly important, interpersonal skills to communicate findings and share key information as part of a larger research team is required.

STRATA LEVEL: 2 – Technician

Also Known as:

- Data Management Analyst
- Business Data Analyst
- Database Analyst

Education and Experience:

- A degree in mathematics, statistics, engineering, computer science or a related field is preferred but not required.
- Fluent in programming languages such as Python or R.
- Certification or working knowledge of integration and analytical tools such as Power BI, Agile, Azure or other cloud related software.
- A minimum of two years' experience in an analytical role or a combination of education and experience is often preferred.

Associated NOC(s):

- **2172** – Database Analyst
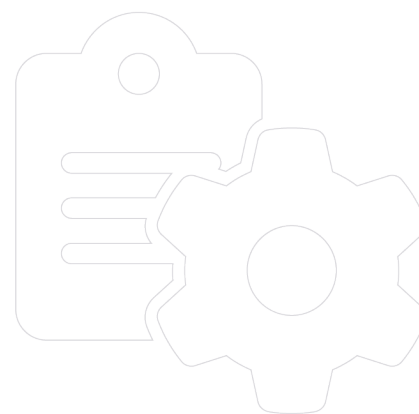
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TECHNICAL

Data Analysis

Applies recognized statistical tools and techniques to interpret and analyze data for the purposes of uncovering trends, patterns, and opportunities to enable strategic decision making.

- Perform data analysis studies that align with organizational practices to collect, compile, and analyze data.
- Apply appropriate ETL techniques (extract, transformation, loading) to transform large amounts of data into digestible information in line with standard organizational processes.
- Apply appropriate analytical programming techniques using standard tools to provide data solutions to facilitate decision making ensure vendors' and contractors' deliverables and services are suitable for completing project goals.
- Constructs queries and automated scripts to improve organizational processes and productivity.
- Knowledge of machine learning techniques to gain new insights from data to improve workflow and decision making.

Data Collection and Cleaning

Collects relevant data sources to prepare data for analysis to facilitate insights and support evidence-based decision making.

- Reduce data to its normal form to minimize dependencies, eliminate redundancy, or increase consistency to facilitate further data processing.
- Applies appropriate techniques to detect and correct corrupt data to ensure data can be structured to facilitate analysis.
- Gather relevant data to from various datasets to create a database to produce meaningful insights.
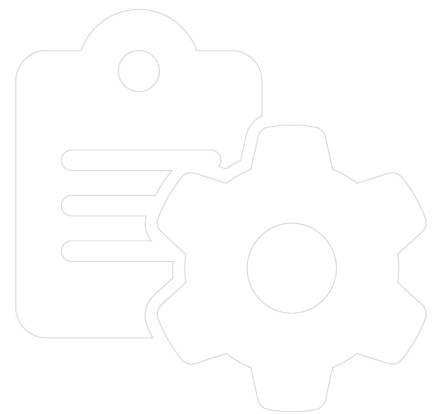
Data Quality Assurance and Control

Follows appropriate processes, as directed by organizational best practices, to ensure quality is maintained throughout the collection, analysis, and management of data.

- Defines the quality assurance criteria to evaluate data against to monitor key metrics.
- Evaluate datasets to identify quality issues to determine the most appropriate solutions to solve quality issue.
- Evaluates risks to data accuracy and monitors data to ensure quality is maintained in the dissemination of information to end users.
- Applies data quality requirements to ensure best practices are followed throughout the process of data analysis and reporting.
- Builds in data quality checks to verify accuracy and completeness of throughout data processing.
- Identifies root cause of data integrity to recommend approaches towards restoring data integrity.

Database Organization

Organize and maintain databases to ensure that information is available and accessible to the organization to facilitate analysis, research, and decision making.

- Evaluates user specification and requests for data to ensure database contains relevant information to end user.
- Updates database platforms with scheduled datasets to ensure accuracy in data reporting.
- Extracts and transforms data to permanently migrate data from one storage system to another to migrate data.
- Backs up data to protect against unforeseen circumstances to ensure data is not lost due to unforeseeable reasons.

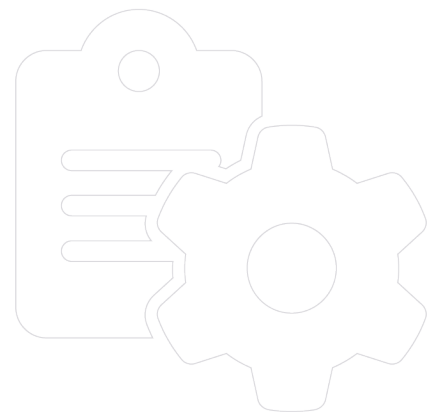eco canada

Data Visualization

Presents meaningful visualizations of data using charts, graphics, infographics, or other visual representations to communicate data analysis and support decision making with quantitative evidence.

- Develops specific requirements for data visuals to accurately describe the analytical problem, scope, and required datasets to solve the problem.
- Identifies suitable data visualization techniques to make the data usable and understandable to different audiences.
- Designs high quality visualizations to effectively communicate statistical information in the form of operational reports, dashboards, or other publications.
- Presents data using audience appropriate visualizations and language to communicate statistical information in an easy-to-read format.
- Develops and validates visualization tools to deploy tools in production environments.
- Maintains a working knowledge of visualization techniques to ensure the most effective tools are used to communicate complex information.

Computer Programming

Uses programming languages to write code to instruct software which actions to perform and in which order.
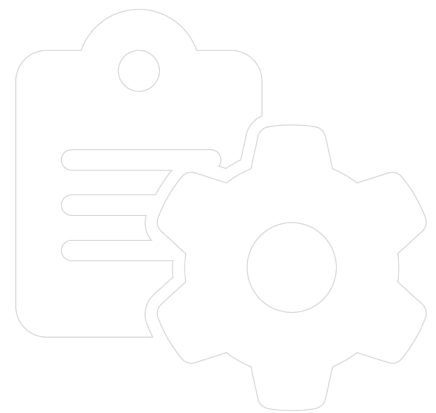
- Develops codes and scripting languages on relevant software to facilitate smooth query design and data processing.
- Applies an appropriate programming language to create automation scripts, code, and processes to train neural nets to achieve faster workflow.
- Applies appropriate programming languages to express rules and facts about a problem in logical form to solve problems or verify correctness.
- Writes code to organize a program around abstract data structures, that combines data and the methods used to access or manipulate data, so objects interact with each other to collectively fulfil the desired functions.
- Uses specialized information and communication technology tools to create automation scripts, code, and processes to train neural nets to achieve faster workflow.

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Data Provenance

Applies appropriate processes to trace and record the origin of data to understand its movements between databases.

- Breaks down data sources in data warehouses to track the creation of intellectual property and provide an audit trail.
- Maintains historical information on data handling to reference published data and corresponding sources.
- Applies data lineage techniques to track and combine data to create a data mapping framework.

PERSONAL AND PROFESSIONAL

Communication

Positively directs outcomes by delivering communication that results in a better understanding of goals and objectives and that capture interest, and gain support for immediate action.

- Communicates with other team members to share information and resources to exploit opportunities and efficiencies.
- Contributes to inter/intra-departmental teams to generate ideas and solutions, solve problems, and improve overall organizational performance.
- Verbally conveys complex technical information accurately, clearly, and effectively to communicate technical operations.
- Recommends improvements or solutions to supervisors to improve operational efficiency.

Attention to Detail

Delivers a concentrated concern, including monitoring and checking information, organizing tasks and resources efficiently, or all areas involved towards the completion of an objective.

- Scrutinizes data and samples to ensure accurate collection.
- Provides accurate, consistent, and reliable metadata on all pieces of work to ensure reliable results.
- Follows process steps as outlined in standard operating procedures when completing routine tasks.
- Catches and corrects own errors or omissions, where applicable, to reduce future performance issues so that software products, systems, interfaces, or applications operate as expected.

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Problem Solving

Identifies problems and uses logic, judgement, and evidence to evaluate alternative scenarios and recommend solutions to achieve the desired goal.

- Considers all pieces of information when attempting to solve problems to produce a cognisant and comprehensive solution.
- Analyzes data to evaluate operations, understand trends, and potential areas of concern to take appropriate action where required.
- Simplifies complex ideas and technical concepts into accessible information to communicate with stakeholders, senior management, and team members.
- Analyzes project metrics to understand trends and potential areas of concern to take appropriate actions where required.
- Evaluates time commitments and resource constraints to effectively balance overlapping projects to ensure effective time management.

REGULATORY

Regulatory Compliance

Adheres to specific regulations, codes, and legislation within a defined jurisdiction to ensure the health and safety of others.

- Complies with specific industry regulations within a defined jurisdiction to maintain a safe work environment.
- Stays current on changes to regulatory policies and legislative changes to ensure project[s] maintain compliance.

Canada

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