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## **Occupation-Specific Information - Data Scientist**

<https://www.onetonline.org/link/summary/15-2051.00>

### **Job-Description**

Develop and implement a set of techniques or analytics applications to transform raw data into meaningful information using data-oriented programming languages and visualization software. Apply data mining, data modeling, natural language processing, and machine learning to extract and analyze information from large structured and unstructured datasets. Visualize, interpret, and report data findings. May create dynamic data reports.

### **Tasks**

- Analyze, manipulate, or process large sets of data using statistical software.
- Apply feature selection algorithms to models predicting outcomes of interest, such as sales, attrition, and healthcare use.
- Apply sampling techniques to determine groups to be surveyed or use complete enumeration methods.
- Clean and manipulate raw data using statistical software.
- Compare models using statistical performance metrics, such as loss functions or proportion of explained variance.
- Create graphs, charts, or other visualizations to convey the results of data analysis using specialized software.
- Deliver oral or written presentations of the results of mathematical modeling and data analysis to management or other end users.
- Design surveys, opinion polls, or other instruments to collect data.
- Identify business problems or management objectives that can be addressed through data analysis.
- Identify relationships and trends or any factors that could affect the results of research.

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- Identify solutions to business problems, such as budgeting, staffing, and marketing decisions, using the results of data analysis.
  - Propose solutions in engineering, the sciences, and other fields using mathematical theories and techniques.
  - Read scientific articles, conference papers, or other sources of research to identify emerging analytic trends and technologies.
  - Recommend data-driven solutions to key stakeholders.
  - Test, validate, and reformulate models to ensure accurate prediction of outcomes of interest.
  - Write new functions or applications in programming languages to conduct analyses.

### **Detailed Work Activities**

- Advise others on analytical techniques.
- Analyze business or financial data.
- Analyze data to identify or resolve operational problems.
- Analyze data to identify trends or relationships among variables.
- Analyze data to inform operational decisions or activities.
- Apply mathematical principles or statistical approaches to solve problems in scientific or applied fields.
- Determine appropriate methods for data analysis.
- Develop procedures to evaluate organizational activities.
- Develop scientific or mathematical models.
- Prepare analytical reports.
- Prepare data for analysis.
- Prepare graphics or other visual representations of information.
- Present research results to others.
- Select resources needed to accomplish tasks.
- Update technical knowledge.
- Write computer programming code.