

ALL

IMPORTANT

Roles In Data Science

Defenition, Skills, Tools & Salary

Data science encompasses a variety of roles, each with its own set of responsibilities, required skills, tools, and average salary.

DATA SCIENTIST



DATA ENGINEER



DATA ANALYST



ML ENGINEER



BI ANALYST



Data Scientist

Definition: Data scientists extract insights and knowledge from both structured and unstructured data. They use a combination of statistics, machine learning, and programming to analyze and interpret complex data sets.

Skills Required:

- Strong knowledge of statistics and mathematics.
- Proficiency in programming languages such as Python or R.
- Data cleaning and preprocessing skills.
- Machine learning expertise.
- Effective communication skills for presenting findings.

Tools Used:

- Python libraries (e.g., NumPy, Pandas, Scikit-learn).
- R programming language.
- Data visualization tools (e.g., Matplotlib, Seaborn, Tableau).
- SQL for database queries.

AVG SALARY

\$80,000 to \$130,000 per year

Data Analyst

Definition: Data analysts focus on interpreting and analyzing data to help organizations make informed business decisions. They often work with databases, spreadsheets, and statistical tools to generate reports and visualizations.

Skills Required:

- Proficiency in data analysis tools.
- Strong Excel skills.
- SQL for querying databases.
- Basic statistical knowledge.
- Data cleaning and visualization skills.

Tools Used:

- Excel, Google Sheets.
- SQL for database queries.
- Business Intelligence tools (e.g., Power BI, Tableau).

AVG SALARY

\$60,000 to \$90,000 per year

Machine Learning Engineer

Definition: Machine learning engineers design and implement algorithms that enable machines to learn from data and make predictions. They work closely with data scientists to deploy and maintain machine learning models.

Skills Required:

- Strong programming skills (Python, Java, etc.).
- Deep understanding of machine learning algorithms.
- Distributed computing and big data technologies.
- Model deployment and maintenance skills.

Tools Used:

- TensorFlow, PyTorch.
- Docker for containerization.
- Apache Spark for big data processing.
- Version control systems (e.g., Git).

AVG SALARY

\$100,000 to \$150,000 per year

Data Engineer

Definition: Data engineers build and maintain the architecture necessary for generating insights from large volumes of data. They design, develop, and manage the data infrastructure, including databases, large-scale processing systems, and data warehouses.

Skills Required:

- Proficiency in database management (SQL, NoSQL).
- ETL (Extract, Transform, Load) processes.
- Programming skills (e.g., Python, Java).
- Knowledge of big data technologies.
- Data modeling and schema design.

Tools Used:

- Apache Hadoop, Apache Spark.
- SQL databases (e.g., MySQL, PostgreSQL).
- Cloud platforms (e.g., AWS, Azure, GCP).
- Data pipeline tools (e.g., Apache Airflow).

AVG SALARY

\$90,000 to \$130,000 per year

