Lesson2. Data Science Career

Lesson Objectives:

At the end of this lesson, you will be able to:

1. Understand the job and functions of a Data Scientist

Common Tasks of a Data Scientists

Based on northeastern.edu the Data scientists work closely with business stakeholders to understand their goals and determine how data can be used to achieve those goals. They design data modeling processes, create algorithms and predictive models to extract the data the business needs, and help analyze the data and share insights with peers. While each project is different, the process for gathering and analyzing data generally follows the below path:

1. Ask the right questions to begin the discovery process
2. Acquire data
3. Process and clean the data
4. Integrate and store data
5. Initial data investigation and exploratory data analysis
6. Choose one or more potential models and algorithms
7. Apply data science techniques, such as machine learning, statistical modeling, and artificial intelligence
8. Measure and improve results
9. Present final result to stakeholders
10. Make adjustments based on feedback
11. Repeat the process to solve a new problem

Common Data Scientist Job Titles

The most common careers in data science include the following roles.

1. **Data scientists:** Design data modelling processes to create algorithms and predictive models and perform custom analysis
2. **Data analysts:** Manipulate large data sets and use them to identify trends and reach meaningful conclusions to inform strategic business decisions
3. **Data engineers:** Clean, aggregate, and organize data from disparate sources and transfer it to data warehouses.
4. **Business intelligence specialists:** Identify trends in data sets
5. **Data architects:** Design, create, and manage an organization's data architecture

Essential Data Science Skills

Most data scientists use the following core skills in their daily work:

1. **Statistical analysis:** Identify patterns in data. This includes having a keen sense of pattern detection and anomaly detection.
2. **Machine learning:** Implement algorithms and statistical models to enable a computer to automatically learn from data.
3. **Computer science:** Apply the principles of artificial intelligence, database systems, human/computer interaction, numerical analysis, and software engineering.
4. **Programming**: Write computer programs and analyze large datasets to uncover answers to complex problems. Data scientists need to be comfortable writing code working in a variety of languages such as Java, R, Python, and SQL.
5. **Data storytelling:** Communicate actionable insights using data, often for a non-technical audience.

Data scientists play a key role in helping organizations make sound decisions. As such, they need "soft skills" in the following areas.

1. **Business intuition:** Connect with stakeholders to gain a full understanding of the problems they're looking to solve.
2. **Analytical thinking.** Find analytical solutions to abstract business issues.
3. **Critical thinking:** Apply objective analysis of facts before coming to a conclusion.
4. **Inquisitiveness:** Look beyond what's on the surface to discover patterns and solutions within the data.
5. **Interpersonal skills:** Communicate across a diverse audience across all levels of an organization.