

## Article 5: Data Science Lifecycle and Its Importance

Data science is the process of extracting insights from data through analysis, modeling, and visualization. The data science lifecycle outlines the steps taken from data collection to actionable insights.

### Lifecycle Phases

- **Data Collection:** Gathering raw data from various sources.
- **Data Cleaning:** Removing inconsistencies and errors.
- **Exploratory Data Analysis (EDA):** Understanding data patterns.
- **Modeling:** Building predictive or descriptive models.
- **Deployment:** Integrating models into real-world applications.
- **Monitoring and Maintenance:** Ensuring model performance over time.

### Importance

Proper lifecycle management ensures data quality, model accuracy, and business value.