

Data Cleaning Techniques

Data Quality Issues

1. Missing values
2. Duplicates
3. Inconsistent formats
4. Outliers
5. Invalid data

Cleaning Methods

1. Imputation techniques
2. Standardization
3. Normalization
4. Outlier detection
5. Data validation

Tools and Libraries

1. Pandas
2. OpenRefine
3. Trifacta
4. Python scripts
5. SQL cleaning