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## TASK 4:

### Data Science Lifecycle Example

#### 1. Problem Definition:

- Predict upcoming fashion trends to help brands design relevant collections and optimize inventory.

#### 2. Data Collection:

- Gather historical sales, social media insights, fashion blogs, and Google Trends data.

#### 3. Data Cleaning & Preprocessing:

- Handle missing data, standardize formats, process text/images, and create trend indicators.

#### 4. Model Training & Evaluation:

- Use models like ARIMA, XGBoost , and CNNs. Evaluate with RMSE, MAE, and cross-validation.

#### 5. Deployment & Monitoring:

- Integrate with inventory systems, track performance, and refine models with new data.