💻 Hands-on: Implementation with scikit-learn

Practical implementation guide for unsupervised learning algorithms

📦 Key Imports

```
from sklearn.cluster import KMeans
from sklearn.cluster import DBSCAN
from sklearn.decomposition import PCA
from sklearn.ensemble import IsolationForest
```

🔄 ML Pipeline

1. StandardScaler
2. Dimensionality Reduction
3. Clustering Algorithm

📊 Evaluation Metrics

- `silhouette_score`
- `davies_bouldin_score`
- `calinski_harabasz_score`

📈 Visualization Tools

matplotlib | **seaborn**

For plotting results and analysis

✨ Best Practices

- ✓ Cross-validation for robustness
- ✓ Careful parameter tuning
- ✓ Domain knowledge validation
- ✓ Iterative experimentation

Clustering / Anomaly Detection