| **Library** | **Description** | **Installation Command** |
| --- | --- | --- |
| numpy | Numerical computing with arrays and matrices | pip install numpy |
| pandas | Data manipulation and analysis | pip install pandas |
| matplotlib | Plotting and data visualization | pip install matplotlib |
| seaborn | Statistical data visualization (built on matplotlib) | pip install seaborn |
| scikit-learn | Machine learning algorithms | pip install scikit-learn |
| tensorflow | Deep learning framework (by Google) | pip install tensorflow |
| keras | High-level API for building neural networks | pip install keras |
| xgboost | Extreme Gradient Boosting | pip install xgboost |
| lightgbm | Fast, distributed gradient boosting framework | pip install lightgbm |
| catboost | Gradient boosting by Yandex | pip install catboost |
| statsmodels | Statistical modeling | pip install statsmodels |
| plotly | Interactive plotting library | pip install plotly |
| mlxtend | Helper functions for ML | pip install mlxtend |
| joblib | Saving/loading ML models | pip install joblib |
| opencv-python | Computer vision library | pip install opencv-python |
| nltk | Natural language processing | pip install nltk |
| spacy | NLP library | pip install spacy |
| transformers | State-of-the-art NLP models from Hugging Face | pip install transformers |
| torch | PyTorch - Deep learning framework | pip install torch |
| fastai | Simplified PyTorch-based deep learning | pip install fastai |