Python Libraries List

# Data Manipulation & Analysis

Pandas: Data manipulation and analysis.

NumPy: Numerical computations.

Dask: Scalable data analysis.

Vaex: Out-of-core DataFrame operations.

# Data Visualization

Matplotlib: Basic plotting.

Seaborn: Statistical data visualization.

Plotly: Interactive plots.

Bokeh: Interactive visualizations for web.

Altair: Declarative statistical visualization.

Dash: Interactive dashboards using Plotly.

# Machine Learning

Scikit-learn: General-purpose machine learning.

TensorFlow: Deep learning framework.

PyTorch: Deep learning and neural networks.

XGBoost: Gradient boosting.

LightGBM: Light and fast gradient boosting.

CatBoost: Categorical boosting library.

# Natural Language Processing (NLP)

NLTK: Text processing and NLP.

spaCy: Industrial-strength NLP.

Transformers: Pre-trained transformer models (by Hugging Face).

TextBlob: Simplified text processing.

Gensim: Topic modeling and document similarity.

# Data Collection & Web Scraping

Requests: HTTP requests.

Beautiful Soup: Web scraping.

Scrapy: Web scraping framework.

Selenium: Browser automation.

Playwright: Modern browser automation.

# Data Storage & Databases

SQLAlchemy: SQL toolkit and ORM.

Psycopg2: PostgreSQL adapter.

PyMongo: MongoDB client.

Redis-py: Redis client.

# Big Data & Distributed Computing

PySpark: Python API for Apache Spark.

Dask: Distributed computing.

Ray: Distributed computing and reinforcement learning.

# Image Processing

Pillow (PIL): Basic image processing.

OpenCV: Advanced computer vision.

scikit-image: Image analysis.

# Audio Processing

Librosa: Audio analysis.

PyDub: Audio manipulation.

Wave: Basic audio file handling.

# Mathematics & Statistics

SciPy: Advanced mathematics and scientific computing.

SymPy: Symbolic mathematics.

Statsmodels: Statistical modeling.

# Automation

PyAutoGUI: GUI automation.

APScheduler: Job scheduling.

Celery: Distributed task queue.

# Testing

unittest: Built-in testing framework.

pytest: Advanced testing tool.

nose2: Test discovery and runner.

# Development Utilities

Flask: Web framework.

Django: Web development framework.

FastAPI: High-performance API development.

Pydantic: Data validation using Python types.

Typer: CLI apps with ease.

# Cybersecurity & Cryptography

PyCrypto: Cryptography (deprecated).

cryptography: Modern cryptography.

paramiko: SSH protocol handling.

hashlib: Hash functions.

# Miscellaneous

itertools: Iteration utilities (built-in).

functools: Functional programming tools (built-in).

logging: Built-in logging.

tqdm: Progress bar.

configparser: Configuration file parsing.