

Enhancing Manufacturing Processes with Python Libraries

1. NumPy

- Purpose: NumPy is used for numerical computations and handling large datasets efficiently.
- Features: Supports multi-dimensional arrays, mathematical operations, and linear algebra functions.
- Relevance to Manufacturing: Useful in simulations, statistical analysis, and data processing for optimization.

2. Pandas

- Purpose: Pandas is used for data manipulation and analysis.
- Features: Provides DataFrame and Series objects for efficient data handling and analysis.
- Relevance to Manufacturing: Helps in analyzing production data, quality control, and process monitoring.

3. OpenCV

- Purpose: OpenCV is used for computer vision and image processing.
- Features: Includes image recognition, object detection, and video analysis capabilities.
- Relevance to Manufacturing: Used in quality inspection, defect detection, and automation in assembly lines.