Machine Learning

Machine learning libraries

Salymbekov University

Miss Aliia Beishenalieva

aliya.beiwenalieva@gmail.com

Machine learning libraries

1. Scikit-learn

•**Description**: A robust library for classical machine learning algorithms, providing simple and efficient tools for data mining and data analysis.

•**Key Features**:

- Supports classification, regression, clustering, and dimensionality reduction.
- User-friendly API and extensive documentation.
- Works well with NumPy and pandas.

Machine learning libraries

2. TensorFlow

•**Description**: An open-source library developed by Google for deep learning and neural network research.

•**Key Features**:

- Supports a wide range of neural network architectures.
- High scalability and can run on multiple CPUs and GPUs.
- Offers TensorFlow Lite for mobile and embedded devices.

Machine learning libraries

3. Keras

•**Description**: A high-level neural networks API that runs on top of TensorFlow, simplifying the creation of deep learning models.

•**Key Features**:

- User-friendly and modular, making it easy to experiment with different neural network architectures.
- Supports convolutional and recurrent networks as well as combinations of both.

Machine learning libraries

4. PyTorch

•**Description**: An open-source machine learning library developed by Facebook, widely used for deep learning applications.

•**Key Features**:

- Dynamic computation graph, allowing for more flexibility during model training.
- Strong support for GPU acceleration and distributed training.

Machine learning libraries

5. Pandas

•**Description**: Although not a machine learning library per se, it's an essential data manipulation library for preparing data for machine learning.

•**Key Features**:

- Provides data structures for efficiently handling and analyzing data.
- Integrates well with other machine learning libraries.

Machine learning libraries

6. NumPy

•**Description**: A fundamental library for numerical computing in Python.

•**Key Features**:

- Provides support for arrays, matrices, and a host of mathematical functions.
- Often used in conjunction with other libraries.

Machine learning libraries

7. OpenCV

•**Description**: A library for computer vision tasks.

•**Key Features**:

- Supports image processing, video analysis, and real-time computer vision.

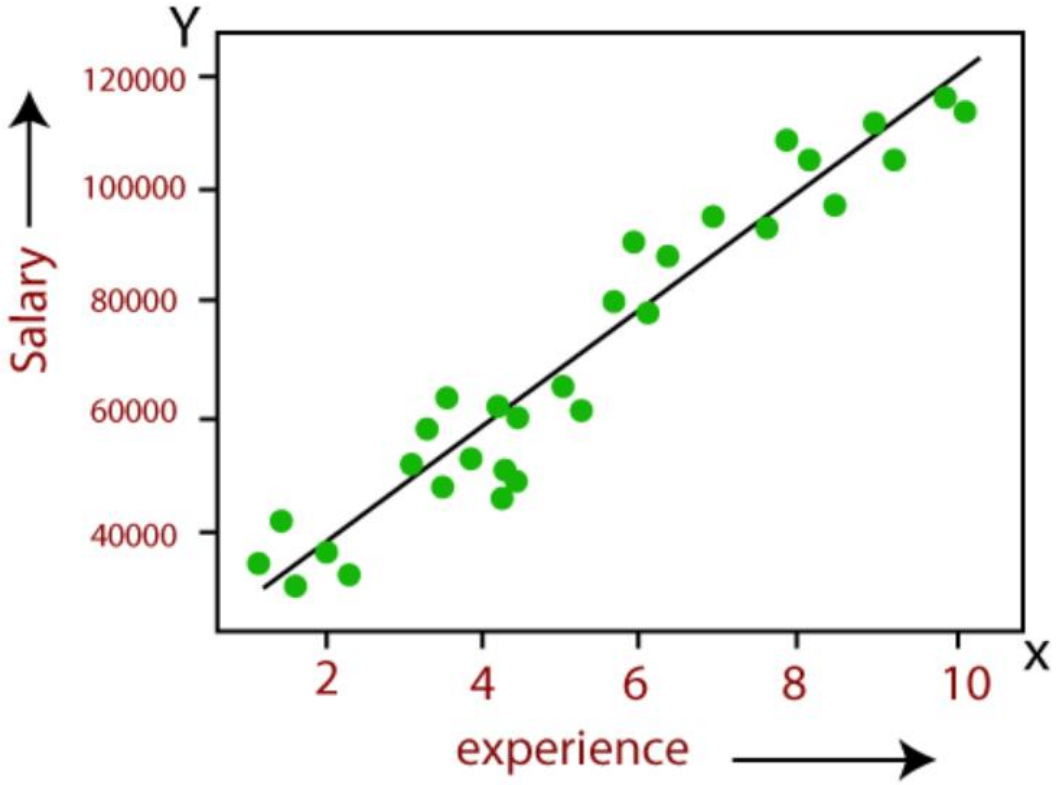
Machine learning libraries

8. Matplotlib

•**Description**: Libraries for data visualization.

•**Key Features**:

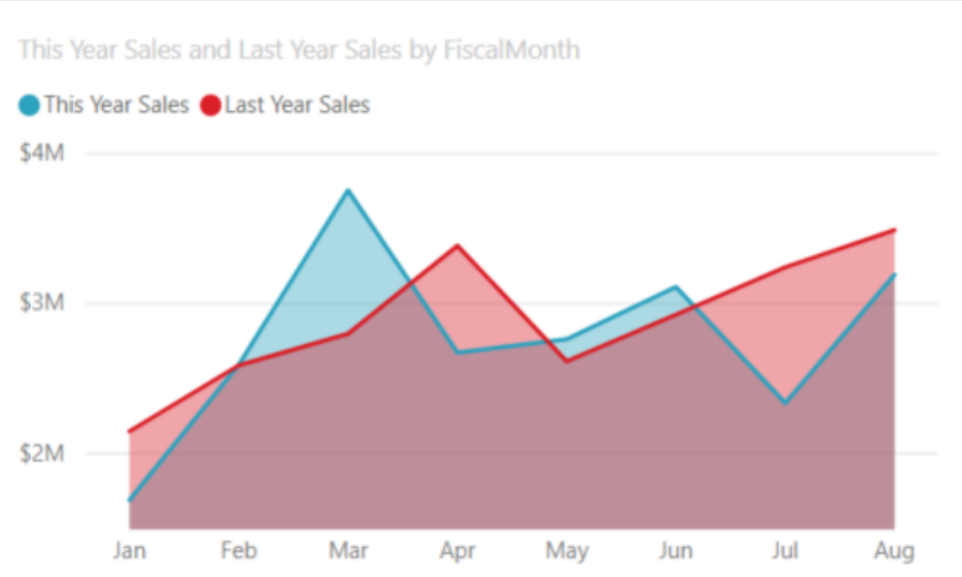
- Matplotlib: A plotting library for creating static, animated, and interactive visualizations.


Y
120000
100000
80000
60000
40000
Salary
2
4
6
8
10
X
experience

Task

- Result of the linear regression on a website
  - Linear regression
  - Website
  - Design

Area charts: Basic (Layered) and Stacked



The basic area chart is based on the line chart with the area between the axis and line filled in. Area charts emphasize the magnitude of change over time, and can be used to draw attention to the total value across a trend. For example, data that represents profit over time can be plotted in an area chart to emphasize the total profit. On the other hand, stacked area charts display the cumulative total of multiple data series stacked on top of each other,

Was this page helpf

Yes No