Diary Entry - Week 5

Date: 12-08-2024 to 16-08-2024

Topics Covered:

- **Class-Based Programming**
- Explored object-oriented programming (OOP) concepts, focusing on class-based programming in Python.
- Practiced creating and manipulating classes and objects, understanding inheritance, polymorphism, and encapsulation.
- **Scikit-Learn and SciPy**
- Introduced to Scikit-Learn, a powerful machine learning library in Python.
- Covered fundamental functions of SciPy for scientific computing.
- Engaged in hands-on exercises to apply machine learning algorithms using Scikit-Learn.
- **Object-Oriented Programming (OOP)**
- Furthered understanding of OOP principles, emphasizing design patterns and best practices.
- Applied OOP concepts to solve real-world problems, reinforcing theoretical knowledge through practical application.
- **Python Libraries**
- Studied various Python libraries essential for data science and machine learning, including Matplotlib and Seaborn for data visualization.
- Conducted practical exercises to implement these libraries in data analysis and visualization tasks.
- **Gradient Computation using TensorFlow**
- Introduced to TensorFlow, a powerful framework for deep learning.
- Focused on gradient computation and backpropagation algorithms, fundamental concepts in neural network training.

Summary:

Week 5 was a comprehensive exploration of advanced programming concepts, machine learning tools, and deep learning frameworks. The hands-on exercises and projects facilitated a deeper understanding of theoretical concepts and their practical applications.

Goals for Next Week:

- Explore advanced deep learning techniques, including convolutional neural networks (CNNs) and recurrent neural networks (RNNs).
- Further practice with Python libraries for data visualization and machine learning.
- Engage in more complex projects and exercises to solidify understanding and application of learned concepts.