Lab03_TensorFlow_vs_PyTorch

Project Overview

This project is a comparative study and implementation of a machine learning task using two popular deep learning frameworks: **TensorFlow** and **PyTorch**. The notebook demonstrates how to build, train, and evaluate models using both frameworks, highlighting the differences in their APIs and performance characteristics.

The goal is to provide hands-on experience with both TensorFlow and PyTorch, enabling users to understand their similarities and differences in practical terms.

Contents

- **Lab03_TensorFlow_vs_PyTorch (3).ipynb**: Jupyter notebook containing all code, experiments, and explanations.

- Comparative analysis of model implementations.

- Performance evaluation and results visualization.

Requirements

- Python 3.7+

- Jupyter Notebook or JupyterLab

- TensorFlow 2.x

- PyTorch 1.x

- Other Python packages:

  - numpy

  - matplotlib

  - torchvision (for PyTorch datasets)

  - tensorflow-datasets (optional)

You can install the required packages via pip:

```bash
pip install tensorflow torch torchvision numpy matplotlib
```

How to Run

1. Clone the repository:

git clone https://github.com/your-username/your-repo-name.git

cd your-repo-name

2. Launch Jupyter Notebook:

bash

Copy code

3. Open the notebook file Lab03_TensorFlow_vs_PyTorch (3).ipynb.

4. Run all cells to reproduce the experiments

Project Structure

Lab03_TensorFlow_vs_PyTorch (3).ipynb

README.md\

Author

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