Environment Setup Guide

Environment Setup Guide: Human Activity Recognition Project

1. Required Software

- Python 3.8 or higher

- Jupyter Notebook or Google Colab

- Git (optional, for version control)

2. Required Python Libraries

Install the following libraries using pip:

```
pip install numpy pandas matplotlib scikit-learn tensorflow keras seaborn
```

Additional useful libraries:

- fpdf (for report generation)

- zipfile36 (for zip file handling)

3. Hardware Requirements

- Minimum 8 GB RAM recommended

- GPU acceleration (Optional but helpful for faster model training)

4. Dataset Download Instructions

- Dataset: WISDM v1.1

- URL: https://www.cis.fordham.edu/wisdm/dataset/WISDM_ar_v1.1_raw.zip

- Unzip the downloaded file.

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- Ensure you have access to both 'accel' and 'gyro' raw folders.

5. Folder Structure Recommendation

Organize project files as:

/Project_Folder

   /data

   /models

   /plots

   /notebooks

   README.md

   requirements.txt

6. Suggested Setup for Google Colab

- Upload dataset to Google Drive.

- Mount Drive inside Colab:

```
from google.colab import drive

drive.mount('/content/drive')
```

- Adjust data paths accordingly.

7. Notes

- Always verify dataset integrity after download.

- Use virtual environments or Conda environments to avoid dependency conflicts.

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- GPU training can be enabled in Colab for free.