User Guide for EEG Dataset

1. Overview

This dataset contains EEG recordings from 32 participants collected during a visual evoked potential (VEP) experiment. The data supports research in visual decoding, EEG-based image classification, and cognitive mechanisms behind known and unknown perceptions.

2. Data Structure

The dataset is organized into folders and files as follows:

VVIQuestionnaire.pdf: The Vividness of Visual Imagery Questionnaire (VVIQ) was used to evaluate participants' memory and imagination capabilities.

Participant_info.csv: Participant metadata, including:
Participant ID: A unique identifier for each participant.
Age: Age of the participant.
Gender: Gender of the participant.
Image Class Viewed: The image class is shown to the participant.
VVIQ Score: The participant's VVIQ score.

Class Folders: Four main class folders representing the images viewed:

A: Apple.
C: Car.
P: Human face.
F: Flower.

Each class folder contains two subfolders representing experimental phases:

A1, A2 (for Apple), C1, C2 (for Car), P1, P2 (for Human face), and F1, F2 (for Flower).

Subfolders contain EEG data as:
CSV files: Tabular raw EEG data (14 channels).
EDF files: Standard EEG format for further processing exported from the EMOTIVPro software.

3. Experimental Setup

Device: EPOC X – 14 EEG device with 14 channels.
Sampling Rate: 128 Hz.
Electrode Placement: Based on the 10-20 system.
Software: EMOTIVPro is used for data collection and annotation.

4. Participant Information

Participants:

35 adults were recruited; 32 participants passed the VVIQ test and contributed to the dataset.

All participants had normal vision.
Task: Participants viewed one of four image classes (apple, car, flower, or human face) displayed on a white screen while their brain activity was recorded.

5. Applications

The dataset can be used for:

Visual decoding tasks.
EEG-based image classification and reconstruction.
Cognitive mechanism research.

6. Important Notes

Data Preprocessing:
The raw dataset may contain artifacts like eye movements (EOG) and muscle activity (EMG). Preprocessing (e.g., artifact removal and filtering) is required for analysis.

Anonymity:

Participant names have been removed to ensure anonymity. IDs are used instead.

7. How to Use the Dataset

Access participant information from **Participant_info.csv.**
Navigate to class folders (A, C, P, F) for EEG data corresponding to the visual stimuli shown.
Use the **VVIQuestionnaire.pdf** to understand participant responses in the VVIQ test.