

ANOVA DATASET

The dataset used for the ANOVA analysis is stored in "*anova_dataset.csv*" and contains average performance scores for each participant during pre- and post-training validation. Each row includes the subject number, group ("A" = Test, "B" = Control), phase ("pre" or "post"), and the score, which is the average of three validation trials for that phase.

CHARACTERIZATION DATASET

The characterization dataset is stored in CSV format, where each row contains PreviousAssist, Assist, Perf, PrevClass, Class, and Pref. This dataset is used to train two GP models: a quantitative model, which uses Assist and Perf to learn participant performance at different assistance levels, and a qualitative model, which uses PreviousAssist, Assist, PrevClass, Class, and Pref to model the relationship between perceived challenge and assistance level. PreviousAssist and Assist indicate the assistance levels in the prior and current trials, while PrevClass and Class represent their corresponding classifications (1 = Hard, 2 = Moderate, 3 = Easy). Pref shows the participant's preference between the two trials (1 = prefers prior trial, -1 = prefers current trial).

GP MODEL DATASET

The GP_Model dataset stores the outputs of trained quantitative and qualitative GP models for each participant. Each row contains pred_pts, num_mean, num_var, qual_mean, and qual_var. Here, pred_pts represents the assistance levels at which the models make predictions. The quantitative GP model outputs num_mean (posterior mean of task performance) and num_var (posterior variance of the task performance) for each assistance level. The qualitative GP model outputs qual_mean (posterior mean of perceived challenge level) and qual_var (posterior variance of perceived challenge level).

Training and Alternative Dataset

The Training Dataset includes assistance levels given to participants (first column) during the training and the corresponding task performances (second column). The alternative training dataset includes the assistance levels for the case if the participants in the control group had been trained with the Pareto approach given to the test group.