|  |  |  |
| --- | --- | --- |
| Name | | Description |
| Data preparation | |  |
|  | LEMO\_task\_preprocessing.R | Reads .txt/log files from learning task (selection based on master or based on logs in MRI 1st level ) . Concatenates all text files and preprocess: trim trials with no response, RT thresholded, column selection and coding new ones required for Stan models. Output is gathered data as .txt file . |
|  |  | |
| Run models (cmdStan package; saving chains and loglik) | | |
|  | LEMO\_model\_run\_rlddm.R | Runs RLDDM Stan models using ‘cmdstanr’ package. Extremely time consuming. Allows choosing which model to call, set initial values list, select sampling parameters: n chains, iterations etc. Once the fit is computed it saves log likelihood for later use in model comparison. Outputs: model fit (very large files), log likehood , copy of the script run with date atnd time as filename. |
|  | LEMO\_model\_run\_RWdelta.R | Runs Rescorla-Wagner (delta) model from HbayesDM 2. This is the model for the arm bandit 2 choice task. Allows setting up initial values and sampling parameters, saves fit and loglikelihood. + It modifies the task preprocessing and saves the resulting table in the output dir. The input required is Tsubj , choice (1,2) and outcome (-1,1) .They are obtained from iter, response and fb variables in the preprocessed table.  https://www.rdocumentation.org/packages/hBayesDM/versions/0.2.1/topics/bandit2arm |
|  | | |
| Functions: STAN models (Stan folder) | |  |
|  | LEMO\_rlddm\_v11.stan | Reinforcement learning drift diffusion model (rlddm)  V11 = 1 exponential decision boundary modifier (a\_mod) and 1 learning rate |
|  | LEMO\_rlddm\_v12.stan | V12 = 1 exponential decision boundary modifier and 2 learning rates |
|  | LEMO\_rlddm\_v21.stan | V21 = 1 linear decision boundary modifier and 1 learning rate |
|  | LEMO\_rlddm\_v22.stan | V22 = 1 linear decision boundary modifier and 2 learning rates |
|  | LEMO\_rlddm\_v31.stan | V31 = 1 no decision boundary modifier and 1 learning rate |
|  | LEMO\_rlddm\_v32.stan | V32 = 1 no decision boundary modifier and 2 learning rates |
|  |  |  |
|  | LEMO\_bandit2arm\_delta.stan | Simple reinforcement learning model from hBayesDM |
|  | | |
| Gather outputs | |  |
|  | LEMO\_gather\_modelOutput | Calls *LEMO\_func\_gatherOutput.R*  Gathers the relevant information from the model parameters for statistical analysis. Saves plot for model fit assessment. Depending on the model different paremeters will be collected. Time consuming as it has to load the model fit (very large files) |
|  | *LEMO\_func\_gatherOutput.R* | Function called by gather output script (…) |
|  |  |  |