**NeuroMiner changes for NM 1.2 (Feanor) Release**

|  |  |  |  |
| --- | --- | --- | --- |
| **(New) NM functionalities** | **New/Udated function(s)** | **Status** | **Responsible** |
| (Re-)implementation of constrained stratified CV | nk\_CVpartition\_config, nk\_MakeCrossFolds, nk\_CVpartition | Done | Nikos |
| Alternative label definition interface and functionality |  | In Progress | Clara |
| Factorization visualization in the NM visualization module | nk\_VisModels, nk\_VisXWeight, nk\_VisXHelper, nk\_PrintResults2, display\_visual | Not started | Nikos |
| Factorization mode for NM MLI module (identify e.g. eigenvariates and manipulate only voxels within eigenvariates (strategy for feature assignment to factors will be needed => maximum-wins method) | nk\_MLI\_config, nk\_MLInterpreter | Not started | Nikos/Ariane |
| Synthetic data generation module | *New Functions* | Not started | Nikos/Clara |
| Optimized preprocessing params and model export | *New Functions* | Not started | Nikos |
| Improved memory management (e.g. in the visualization module) | nk\_VisModelsPrep, nk\_VisModels | In Progress | Ariane/Clara |
| Pruning of unused/orphaned functions |  | Not started | Clara |
| Debugging of multi-class permutation | nk\_VisModels, nk\_VisXPermHelper | In Progress | Nikos |
| Hyperopt optimization (see Matlab package hyperopt) and hyperparameter optimization using swarm optimization techniques (PSO, GA, Simulated Annealing) | *New Functions*, nk\_MLOptimizer\_ParamAnnealer | Not started | tbd |
| Fully implement surface-based image processing stream | DataIO, nk\_PerfSpatFilt | Not started | Nikos |
| Implement adaptive reslicing of voxel- and surface-based data (like smoothing) | nk\_PerfSpatFilt, resample\_image | Not started | Nikos |
| “Skip-CV1 cycle and train on full CV1 training and test data” menu item should not be shown in menu when multiple preprocessing hyperparams are present. | nk\_RFE\_config | Not started | Ariane |
| Plug-in interface for the preprocessing module | *New Functions* |  | Clara |
| Refactoring of hyperparameter configuration based on matlearn configuration methodology | nk\_Grid\_config | Not started | Nikos |
| Command line interface for NM | *New Functions* | Not started | Clara |
| Porting of NM Results Viewer to app designer | *New Functions* | Not started | Clara/Ariane |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

***NeuroMiner 1.1 New Feature List***

|  |  |  |
| --- | --- | --- |
| **NM functionalities requiring update** | **Function** | **Status** |
| *Implement mixed-mode stacking option to allow mixing of original data and higher-level predictions in meta-learning setup.* | *Will not be included in NM 1.0* | *Not started* |
| *Implement hierarchical stacking / data fusion in NM* | *Will not be included in NM 1.0* | *Not started* |
| *Implement Bayesian optimization methods for large parameter spaces* | *Will not be included in NM 1.0* | *Not started* |