

1. Research

1.1 Research plan

[The main requirement for the research is precise definition of goals. These are the source of the assumptions made before the experimentation.]

[The goal definition has to have a form that allows to verify whether the goal was achieved or not. The definitions should contain phrases such as: “analysis of”, “comparison of” etc.]

[The reasoning for goals and other related premises have to be presented in this section.]

[The contents of the research plan have to be based on the main goal of the project.]

1.2 Datasets

[This section should contain descriptions of datasets used for the experimentation. A description should contain:

- Dataset origin – a paper, a webpage, an institution etc. giving access to the dataset. The source should be presented in form of a reference to the paper/hyperlink/institution’s name,
- Dataset description – characteristics of the dataset such as:
 - number of samples,
 - number and types of features (real values, integer values, nominal values, strings etc.),
 - value ranges,
 - missing values,
 - other (eg. statistics of features’ values such as: mean, variance, minimal and maximal values etc.),
- Dataset pre-processing – description of dataset transformations:
 - record removal,
 - normalization (value transformations e.g. scaling),
 - missing values filling policy (feature/record removal, filling with mean, median, mode, etc.),
 - dataset augmentation (new sample generation),
 - dataset division (e.g. for training, validation and testing),
 - other,
- Reference to experiments in which the dataset is used.]

1.3 Research environment

[This section characterizes the execution environment of the implementation. Factors such as implementation language(s), libraries used and hardware configuration should be placed in this designated section.]

1.4 Measures

[Measures used for describing results of experiments have to be defined in a separate section. Definition of a measure has to contain description of symbols used in it.]

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[Following sections represent groups of experiments. Those groups usually correspond to goals defined in the research plan.]

.....

1.5 [Experiment group section name]

Experiment 1. [Experiment title]

[All experiments have to have identical description style following this template.
The experiment numeration does not reset for every group – experiments have unique numbers.]

Goal

[This part contains definition of the reason for the experiment.]

Assumptions

[Assumptions part has to show which hyperparameters were constant and which were changed during the experiment. Assumptions should be shown in form of a table or a list.]

Course of the experiment

[This part contains descriptions of: datasets or fragments of datasets used, step-by-step experimentation procedure and result evaluation measure. This and the previous parts of the description should allow a person to recreate the experiment.]

Results

[Tables, graphs, screenshots etc. are shown here.]

[A table caption has to be on the top of the table. A figure caption has to be under it.]

[Figures that represent graphs have to have: titles, descriptions and units of axes, and legends if needed.]

Comments

[Summary of the experiment in form of a commentary on presented results.
Analysis and explanation of observed patterns, effects etc.]

Experiment 2. [Experiment title]

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1.6 [Experiment group section name]

Experiment 3. [Experiment title]

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1.7 Summary of research

[This final section summarizes the whole research. Results of all of experiments should be recalled there. The summary of research should be done from the perspective of the main goal of the project.]

[Final note: if a figure/table is placed in the document, it has to be referred to in the text. Otherwise it is considered an error. The same thing happens with the bibliography and citations. Only exception to this rule is in the “Results” part of experiments, where all or most important results have to be shown. If only most important results are placed in the document, additional file containing all of the results has to be provided.]