
Bachelor Thesis Documentation

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Bachelor Thesis

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Contents:

BACHELORARBEIT

1.1 src package

1.1.1 Subpackages

src.clustering package

Submodules

src.clustering.cluster_mappings module

Cool docstring.

`src.clustering.cluster_mappings.aggregate_cluster (points, labels)`
Arranges all clusters in a list, where a sublist with all points at index *i* corresponds with the cluster with label *i*.

Parameters

- **points** (*list*) – List of datapoints
- **labels** (*list*) – List of unique cluster labels

Returns list of lists of datapoints belonging to the *i*-th cluster

Return type list

`src.clustering.cluster_mappings.alt (func)`

`src.clustering.cluster_mappings.cluster_mappings (vector_inpath, do_pca=False,
target_dim=100, in-
dices_inpath=None, ep-
silon=2.625, min_s=20)`

`src.clustering.cluster_mappings.get_cluster_size (labels)`

`src.clustering.cluster_mappings.init_argparser ()`

`src.clustering.cluster_mappings.load_indices (indices_inpath)`

`src.clustering.cluster_mappings.load_mappings_from_model (mapping_inpath)`

`src.clustering.cluster_mappings.main ()`

This is the main method. Duh.

`src.clustering.cluster_mappings.resolve_indices (points, labels, indices_inpath,
model)`

```
src.clustering.cluster_mappings. train_clustering_parameters ( vector_inpath, iterations=10)
```

Module contents

src.eval package

Submodules

src.eval.analogy module

```
class src.eval.analogy. AnalogyMasterThread ( vector_inpath, analogy_path, per_section, logpath, n)  
    Bases: threading.Thread  
    prepare ( )  
    start_threads ( )  
  
class src.eval.analogy. AnalogyWorkerThread ( worker_id, model)  
    Bases: threading.Thread  
    find_most_similar_cosmul ( a, a_, b)  
    run ( )  
  
src.eval.analogy. analogy_eval ( vector_inpath, analogy_path, per_section=False, logpath=None)  
src.eval.analogy. analogy_eval_parallel ( vector_inpath, analogy_path, per_section=False, logpath=None, threads=1)  
src.eval.analogy. output ( message, logpath=None)  
src.eval.analogy. read_analogies ( analogy_path, per_section=False)  
src.eval.analogy. read_analogies_for_parallel ( analogy_path, per_section=False)  
src.eval.analogy. rreplace ( s, old, new, occurrence)
```

src.eval.concentration module

```
src.eval.concentration. alt ( func)  
src.eval.concentration. calculate_concentration ( model, procs, logpath=None, vector_inpath='')  
src.eval.concentration. calculate_concentrations ( vectors_inpath, procs, max_n_vectors, logpath=None)  
src.eval.concentration. calculate_loss_of_precision ( vector_inpath, procs, sizes, logpath=None)  
  
src.eval.concentration. chunks ( l, n)  
src.eval.concentration. chunks2 ( lst, n)  
src.eval.concentration. init_pool_for_deviances ( pool_args)  
src.eval.concentration. init_pool_for_distances ( pool_args)
```



```
src.eval.concentration. load_vectors_from_model ( vector_inpath, max_n=None, log-  
                                                    path=None, indices=False)  
src.eval.concentration. load_vectors_from_model_parallel ( vector_inpath, procs,  
                                                            logpath=None)  
src.eval.concentration. output ( message, logpath=None)  
src.eval.concentration. rreplace ( s, old, new, occurrence)
```

src.eval.concept_groups module

```
src.eval.concept_groups. main ( )  
src.eval.concept_groups. sampleRelations ( inpath, outpath, n, sample_size, freq_constraint)  
src.eval.concept_groups. sample_part ( relation_pairs, coin_flip, sample_size)  
src.eval.concept_groups. take_sample_from_list ( samplelist, n)
```

src.eval.eval_vectors module

```
src.eval.eval_vectors. apply_on_input ( func, sets, inpath, *args)  
src.eval.eval_vectors. find_nearest_neighbors ( vector_inpath, max, wordlist)  
src.eval.eval_vectors. init_argparser ( )  
src.eval.eval_vectors. main ( )  
src.eval.eval_vectors. opt_callback ( option, opt, value, parser)  
src.eval.eval_vectors. output ( message, logpath=None)  
src.eval.eval_vectors. plot ( data, max, dimensions, show_plot=False, display_names=False)  
src.eval.eval_vectors. plot_distance_distribution ( data, max, show_plot=False)  
src.eval.eval_vectors. rreplace ( s, old, new, occurrence)
```

src.eval.word_similarity module

```
class src.eval.word_similarity. WordSimMasterThread ( n, vector_inpath, wordpair_inpath,  
                                                    logpath, format)  
    Bases: threading.Thread  
    prepare ( )  
    remove_unknowns ( )  
    start_threads ( )  
class src.eval.word_similarity. WordSimWorkerThread ( worker_id, pair_queue, model, y)  
    Bases: threading.Thread  
    run ( )  
src.eval.word_similarity. capitalize ( word)  
src.eval.word_similarity. evaluate_wordpair_sims ( x, y, number_of_pairs)  
src.eval.word_similarity. output ( message, logpath=None)
```

```
src.eval.word_similarity.parallel_word_sim_eval ( vector_inpath, wordpair_path, log-  
                                                    path,format='google',threads=1)  
src.eval.word_similarity.read_wordpairs ( wordpair_path,format='google')  
src.eval.word_similarity.remove_unknowns ( x,y)  
src.eval.word_similarity.rreplace ( s,old,new,occurrence)  
src.eval.word_similarity.word_sim_eval ( vector_inpath, wordpair_path, logpath, for-  
                                                    mat='google')
```

Module contents

src.guesser package

Submodules

src.guesser.svm_guesser module

```
src.guesser.svm_guesser.convert_data ( sets_path,tql_inpath,vector_inpath)  
src.guesser.svm_guesser.create_corrupt_triples ( grouped_pairs,entities)  
src.guesser.svm_guesser.dump_relation_vectors ( relation_vectors,outpath)  
src.guesser.svm_guesser.evaluate ( model,grouped_test,relation_vectors,entities)  
src.guesser.svm_guesser.extract_data_from_uri ( uri)  
src.guesser.svm_guesser.get_rank ( target,ranks)  
src.guesser.svm_guesser.init_argparser ( )  
    Initialize all arguments for an ArgumentParser object and return it.  
    @returns {ArgumentParser} argument parser object  
src.guesser.svm_guesser.load_relation_vectors ( inpath)  
src.guesser.svm_guesser.load_vectors ( vector_inpath)  
    @param vector_inpath: Path to word2vec model file  
src.guesser.svm_guesser.main ( )  
src.guesser.svm_guesser.prepare_training ( sets_path,vector_inpath)  
src.guesser.svm_guesser.rank_entities ( reference,solution,model,entities)  
src.guesser.svm_guesser.read_freebase_data ( sets_path)  
src.guesser.svm_guesser.read_freebase_file ( fb_inpath)  
src.guesser.svm_guesser.read_tql_file ( tql_inpath)  
src.guesser.svm_guesser.test_coverage ( triples,model)  
    Test the coverage of a dataset consisting of freebase triples on word2vec word embeddings. For every triple (h,  
    l, t), the entities h and t are taken and used for look up in the word2vec model.  
    @param triples: list of 3-tuples (freebase triples) @param model: gensim word2vec model  
src.guesser.svm_guesser.train ( model,grouped_train,grouped_corrupted,lossf,relation_types,  
                                epochs=1000,learning_rate=0.01,margin=1)  
src.guesser.svm_guesser.transform_triples ( triples,relation_types,entities)
```

```
src.guesser.svm_guesser. write_data ( triples, found_entities, outpath)
```

Module contents

src.mapping package

Submodules

src.mapping.map_vectors module

```
src.mapping.map_vectors. alt ( func)
src.mapping.map_vectors. construct_nearest_neighbour_graph ( vector_inpath)
src.mapping.map_vectors. dump_defaultdict ( ddict, outpath, pickled=True)
src.mapping.map_vectors. dump_vector_defaultdict ( ddict, outpath, pickled=True)
src.mapping.map_vectors. filter_duplicate_vectors ( vectors_indir, vector_outpath)
src.mapping.map_vectors. filter_duplicate_vectors_parallelized ( vectors_indir,  
                                                                    vector_outpath,  
                                                                    procs=1)

src.mapping.map_vectors. hash_tuple ( t)
src.mapping.map_vectors. index_vectors ( vector_inpath, vector_outpath, indexing_outpath,  
                                           subset)
src.mapping.map_vectors. init_argparse ( )
src.mapping.map_vectors. init_pool ( args)
src.mapping.map_vectors. load_vectors_from_model ( vector_inpath, max_n=None, log-  
                                                    path=None)

src.mapping.map_vectors. main ( )
src.mapping.map_vectors. output ( message, logpath=None)
src.mapping.map_vectors. read_subset ( subset_inpath)
src.mapping.map_vectors. rreplace ( s, old, new, occurrence)
```

src.mapping.mapping_operations module

```
src.mapping.mapping_operations. cosine_similarity ( v1, v2)
src.mapping.mapping_operations. distance ( v1, v2)
src.mapping.mapping_operations. euclidian_distance1 ( v1, v2)
src.mapping.mapping_operations. euclidian_distance2 ( v1, v2)
src.mapping.mapping_operations. manhattan_distance ( v1, v2)
src.mapping.mapping_operations. soft_cosine_similarity ( v1, v2)
```

src.mapping.mapthreading module

```
class src.mapping.mapthreading. MappingMasterThread ( n, vector_inpath, vector_outpath,  
                                                    features, ids_inpath, indices_inpath)  
  
    Bases: threading.Thread  
  
    prepare ( )  
  
    read_ids_file ( ids_inpath)  
  
    start_threads ( )  
  
class src.mapping.mapthreading. MappingWorkerThread ( worker_id, vector_dict, vector_queue, vector_outpath, features, occurrences, indices)  
  
    Bases: threading.Thread  
  
    concat ( v1, v2)  
  
    cosine_similarity ( v1, v2)  
  
    distance ( v1, v2)  
  
    euclidian_distance1 ( v1, v2)  
  
    euclidian_distance2 ( v1, v2)  
  
    hash_indices ( i1, i2)  
  
    manhattan_distance ( v1, v2)  
  
    run ( )  
  
    spray ( v1, v2, cooc)  
  
class src.mapping.mapthreading. VectorDict  
    Bases: object  
  
    add_skippable ( index)  
  
    add_vector ( index, vector)  
  
    get_keys ( )  
  
    get_vector ( index)  
  
    skippable ( index_hash)  
  
src.mapping.mapthreading. alt ( func)  
  
src.mapping.mapthreading. init_argparse ( )  
  
src.mapping.mapthreading. main ( )
```

Module contents

src.prep package

Subpackages

src.prep.corpus package

Submodules

src.prep.corpus.convert_to_plain module

```
src.prep.corpus.convert_to_plain. alt (func)
src.prep.corpus.convert_to_plain. contains_tag (line)
src.prep.corpus.convert_to_plain. convert_decow_to_plain (decow_dir, out_dir,
                                                         log_path, merge_nes,
                                                         log_interval)
src.prep.corpus.convert_to_plain. convert_part (argstuple)
src.prep.corpus.convert_to_plain. convert_part_merging (argstuple)
src.prep.corpus.convert_to_plain. extract_named_entity (line)
src.prep.corpus.convert_to_plain. extract_sentence_id (tag)
src.prep.corpus.convert_to_plain. get_file_number (filename)
src.prep.corpus.convert_to_plain. log_time (logpath='log.txt', interval=5)
src.prep.corpus.convert_to_plain. log_time_mp (logpath='log.txt', interval=5)
src.prep.corpus.convert_to_plain. main ( )
```

src.prep.corpus.extract_conll module

```
src.prep.corpus.extract_conll. extract_conll (inpath, outpath, column)
    Extract information out of CoNLL files.
```

Parameters *inpath* (*str*) – Path to input file.

```
src.prep.corpus.extract_conll. init_argparse ( )
src.prep.corpus.extract_conll. main ( )
```

src.prep.corpus.mapper module

src.prep.corpus.prepare_corpus module

```
src.prep.corpus.prepare_corpus. construct_yaml_str (self, node)
    Docstring for git testing purposes.
src.prep.corpus.prepare_corpus. get_file_number (filename)
src.prep.corpus.prepare_corpus. init_pool (args)
```

```
src.prep.corpus.prepare_corpus.main ( )
src.prep.corpus.prepare_corpus.prepare ( ne_inpath)
src.prep.corpus.prepare_corpus.process_corpora ( nesi, corpus_dir, out_dir, log_dir,
                                                    logging_interval_meta=10,    log-
                                                    ging_interval_processing=10)
src.prep.corpus.prepare_corpus.process_corpus ( argstuple)
```

src.prep.corpus.quick_and_dirty module

```
src.prep.corpus.quick_and_dirty.clean_file ( inpath, outpath)
```

src.prep.corpus.reducer module

Module contents

src.prep.misc package

Submodules

src.prep.misc.decorators module

```
src.prep.misc.decorators.alt ( func)
src.prep.misc.decorators.log_time ( logpath='log.txt', interval=5)
src.prep.misc.decorators.log_time_mp ( logpath='log.txt', interval=5)
```

Module contents

src.prep.nes package

Submodules

src.prep.nes.extractNE module

```
src.prep.nes.extractNE.contains_tag ( line)
src.prep.nes.extractNE.extract_named_entity ( line)
src.prep.nes.extractNE.extract_sentence_id ( tag)
src.prep.nes.extractNE.main ( )
src.prep.nes.extractNE.print_dict_in_file ( dictionary, out_path)
src.prep.nes.extractNE.print_ids_in_file ( dictionary, out_path)
src.prep.nes.extractNE.print_list_in_file ( ne_list, out_path)
src.prep.nes.extractNE.process ( inpath, outpath, logpath)
```

src.prep.nes.merge module

```
src.prep.nes.merge. dump_ids_dict ( idsdict, outpath)
src.prep.nes.merge. freqWorker ( inpath)
src.prep.nes.merge. idWorker ( inpath)
src.prep.nes.merge. load_ids_dict ( inpath)
src.prep.nes.merge. main ( )
src.prep.nes.merge. mergeDicts ( dicttuple)
src.prep.nes.merge. merge_frequency_files ( infiles_path, outpath, logpath)
src.prep.nes.merge. merge_id_dicts ( dicttuple)
src.prep.nes.merge. merge_id_files ( infiles_path, outpath, logpath, yaml=False)
src.prep.nes.merge. print_key_lengths ( dictionary)
src.prep.nes.merge. rl ( infile)
```

src.prep.nes.mwe module

```
src.prep.nes.mwe. create_mwe_pickle ( inpath, outpath, logpath='./mwes.log')
src.prep.nes.mwe. create_mwe_pickle2 ( inpath, outpath, logpath='./mwes.log')
src.prep.nes.mwe. dump_dict_pickle ( d, outpath)
src.prep.nes.mwe. dump_dict_pickle2 ( d, outpath)
src.prep.nes.mwe. load_dict_pickle ( inpath)
src.prep.nes.mwe. load_dict_pickle2 ( inpath)
src.prep.nes.mwe. main ( )
src.prep.nes.mwe. replace_mwes ( mwe_path, corpus_path, out_path)
```

src.prep.nes.statistics module

```
src.prep.nes.statistics. calculate_occurrences ( freqpath, relations_path)
src.prep.nes.statistics. main ( )
```

Module contents

src.prep.relations package

Submodules

src.prep.relations.relations module

```
exception src.prep.relations.relations. MissingTranslationException
    Bases: exceptions.Exception
```

```
    get_id ( )
src.prep.relations.relations. fetch_name ( id, lang='en')
src.prep.relations.relations. fetch_relation_triples_of_file ( inpath,          out-
                                                                path,          logpath,
                                                                lang='en')
src.prep.relations.relations. format_fbid ( id)
src.prep.relations.relations. freebase_request ( query, api_key, service_url)
src.prep.relations.relations. main ( )
src.prep.relations.relations. read_credentials ( )
src.prep.relations.relations. rl ( infile)
src.prep.relations.relations. translate_name ( name, lang='en')
src.prep.relations.relations. translate_word2vec_question_phrases ( inpath,
                                                                    outpath,
                                                                    lang='en')
```

Module contents

Module contents

src.trans_e package

Submodules

src.trans_e.add_inverse_relations module

```
src.trans_e.add_inverse_relations. add_inverse_relations ( relations_inpath,      re-
                                                                lations_outpath,
                                                                inverse_relations,
                                                                known_relations)
src.trans_e.add_inverse_relations. init_argparse ( )
src.trans_e.add_inverse_relations. main ( )
src.trans_e.add_inverse_relations. read_file_with_inverse_relations ( inverse_inpath)
```

src.trans_e.clean_relations module

src.trans_e.contains_entities module

```
src.trans_e.contains_entities. contains_entities ( entities1, entities2)
src.trans_e.contains_entities. create_new_dataset ( entities1, dataset, outpath)
src.trans_e.contains_entities. extract_entities_from_relation_dataset ( dataset_inpath)
src.trans_e.contains_entities. extract_entities_from_tql_file ( tql_path)
src.trans_e.contains_entities. format_fbid ( id)
src.trans_e.contains_entities. init_argparse ( )
```



```
src.trans_e.contains_entities.main ( )
```

src.trans_e.convert_relations module

src.trans_e.differentiate_datasets module

```
src.trans_e.differentiate_datasets.compare_entities ( set1, set2)  
src.trans_e.differentiate_datasets.init_argparse ( )  
src.trans_e.differentiate_datasets.main ( )  
src.trans_e.differentiate_datasets.read_dataset ( inpath)
```

src.trans_e.partition_data module

```
src.trans_e.partition_data.check_data_integrity ( data_inpath, remove_clones, out-  
                                                    path)  
    Check whether all triplets in the data are unique.  
src.trans_e.partition_data.check_set_integrity ( indir)  
src.trans_e.partition_data.get_stats ( data)  
src.trans_e.partition_data.init_argparse ( )  
src.trans_e.partition_data.main ( )  
src.trans_e.partition_data.partition_data ( data, prts, outdir, whole=True)  
src.trans_e.partition_data.partition_relation_wise ( data, prts)  
src.trans_e.partition_data.partition_whole ( data, prts)  
src.trans_e.partition_data.partitions_list ( l, prts)  
src.trans_e.partition_data.read_only_relations_into_set ( inpath)  
src.trans_e.partition_data.read_relations ( inpath)  
src.trans_e.partition_data.write_data_in_file ( data, outfile)
```

Module contents

1.1.2 Module contents

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