

Tensor Flow cheat sheet

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1 Data Preprocessing

1.1 Feature columns

`tf.feature_column`

- `tf.feature_column.numeric_column(colname)`
- `tf.feature_column.bucketized_column(tf.feature_column.numeric_column, boundaries_list)`
- `tf.feature_column.crossed_column([tf.feature_column.categorical_column list], num_hash_buckets)`
- `tf.feature_column.categorical_column_with_identity(colname, num_buckets)`
- `tf.feature_column.categorical_column_with_vocabulary_list(colname, vocabulary_list)`
- `tf.feature_column.categorical_column_with_hash_bucket(colname, hash_bucket_size)`
- `tf.feature_column.embedding_column(tf.feature_column.categorical_column, n_dim)`

2 Estimator API

`tf.estimator`

- `tf.estimator.Estimator(model_fn, out_dir)`

- *model_fn* is a function that returns *tf.estimator.EstimatorSpec* given a triple (*feature_cols*, *targets*, *mode*)

Sample signature: `tf.estimator.EstimatorSpec(**args)`

Arguments list consists of:

1. *mode*, one of the three:
`tf.estimator.ModeKeys.TRAIN` ,
`tf.estimator.ModeKeys.EVAL` ,
`tf.estimator.ModeKeys.PREDICT`
2. *predictions_dict*
3. *loss*
4. *train_op*
5. *eval_metrics_ops*
6. *export_outputs*

- *model_dir* is the name of output directory (string)

- `tf.estimator.train_and_evaluate(estimator, train_spec, eval_spec)`

- *estimator* is an instance of *tf.estimator*

Sample signature: `tf.estimator.[model_name](model_dir, feature_columns, model_params)`

- *train_spec* is an instance of *tf.estimator.TrainSpec*

Sample signature: `tf.estimator.TrainSpec(input_fn, max_steps)`

- *eval_spec* is an instance of *tf.estimator.EvalSpec*

Sample signature: `tf.estimator.EvalSpec(input_fn, steps, start_delay_secs, throttle_secs)`

- Adding performance metrics

Sample signature: `estimator = tf.contrib.estimator.add_metrics(estimator, rmse)`

3 TensorBoard

- `filewriter_name = tf.summary.FileWriter(path_name, tf.graph = tf.get_default_graph())`

- `filewriter_name.close()`

- in terminal or with `%%bash` magic

- `$ tensorboard --logdir path_name`