

tf.contrib.layers.crossed_column

```
crossed_column(  
    columns,  
    hash_bucket_size,  
    combiner='sum',  
    ckpt_to_load_from=None,  
    tensor_name_in_ckpt=None,  
    hash_key=None  
)
```

Defined in [tensorflow/contrib/layers/python/layers/feature_column.py](#).

See the guide: [Layers \(contrib\) > Feature columns](#)

Creates a `_CrossedColumn` for performing feature crosses.

Args:

- `columns`: An iterable of `_FeatureColumn`. Items can be an instance of `_SparseColumn`, `_CrossedColumn`, or `_BucketizedColumn`.
- `hash_bucket_size`: An int that is > 1 . The number of buckets.
- `combiner`: A string specifying how to reduce if there are multiple entries in a single row. Currently "mean", "sqrtn" and "sum" are supported, with "sum" the default. "sqrtn" often achieves good accuracy, in particular with bag-of-words columns. Each of this can be thought as example level normalizations on the column:
 - "sum": do not normalize
 - "mean": do l1 normalization
 - "sqrtn": do l2 normalization For more information: [tf.embedding_lookup_sparse](#).
- `ckpt_to_load_from`: (Optional). String representing checkpoint name/pattern to restore the column weights. Required if `tensor_name_in_ckpt` is not None.
- `tensor_name_in_ckpt`: (Optional). Name of the `Tensor` in the provided checkpoint from which to restore the column weights. Required if `ckpt_to_load_from` is not None.
- `hash_key`: Specify the hash_key that will be used by the `FingerprintCat64` function to combine the crosses fingerprints on `SparseFeatureCrossOp` (optional).

Returns:

A `_CrossedColumn`.

Raises:

- `TypeError`: if any item in `columns` is not an instance of `_SparseColumn`, `_CrossedColumn`, or `_BucketizedColumn`, or `hash_bucket_size` is not an int.
- `ValueError`: if `hash_bucket_size` is not > 1 or `len(columns)` is not > 1 .

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