



# TensorFlow

Курс “Практическое применение по TensorFlow”

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<https://github.com/Firyuza/TensorFlowPractice>

# name\_scope

```
with tf.name_scope('Losses'):
    self.loss = tf.reduce_mean(tf.nn.sparse_softmax_cross_entropy_with_logits(labels=self.labels_batch,
                                                                                logits=self.logits))

    self.reg_loss = cfg.train.weight_decay * tf.add_n(
        [tf.nn.l2_loss(v) for v in self.trainable_variables if 'bn' not in v.name])

    self.total_loss = self.loss + self.reg_loss
```

- Return context manager
- Context manager set up given name as a prefix to the name of defined operations
- Will NOT set up scope name for variable
- Helps divide code into logical parts by the name

# variable\_scope

```
with tf.variable_scope('Backbone', reuse=tf.AUTO_REUSE):  
    self.backbone_model = tf.keras.applications.resnet50.ResNet50(input_tensor=self.images_batch,  
                                                                    weights='imagenet',  
                                                                    include_top=False)  
  
    backbone_output = self.backbone_model.output  
    backbone_output = tf.keras.layers.GlobalAveragePooling2D()(backbone_output)  
  
    self.logits = tf.keras.layers.Dense(self.nrof_classes)(backbone_output)
```

- Return context manager
- Context manager set up given name as a prefix to the name of defined operations that create variables/layers
- Allows to reuse operations (sharing variable)