

# 自定义网络

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主讲：龙良曲

# Outline

- `keras.Sequential`
  - `keras.layers.Layer`
  - `keras.Model`
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# keras.Sequential



```
network = Sequential([layers.Dense(256, activation='relu'),  
                      layers.Dense(128, activation='relu'),  
                      layers.Dense(64, activation='relu'),  
                      layers.Dense(32, activation='relu'),  
                      layers.Dense(10)])  
network.build(input_shape=(None, 28*28))  
network.summary()
```

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- `model.trainable_variables`

- `model.call()`



# Layer/Model

- Inherit from `keras.layers.Layer` `keras.Model`
  - `__init__`
  - `call`
  - Model: compile/fit/evaluate
-

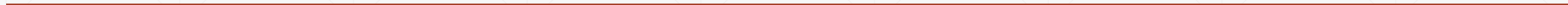


```
class MyDense(layers.Layer):  
  
    def __init__(self, inp_dim, outp_dim):  
        super(MyDense, self).__init__()  
  
        self.kernel = self.add_variable('w', [inp_dim, outp_dim])  
        self.bias = self.add_variable('b', [outp_dim])  
  
    def call(self, inputs, training=None):  
  
        out = inputs @ self.kernel + self.bias  
  
        return out
```



```
class MyModel(keras.Model):  
    def __init__(self):  
        super(MyModel, self).__init__()  
        self.fc1 = MyDense(28*28, 256)  
        self.fc2 = MyDense(256, 128)  
        self.fc3 = MyDense(128, 64)  
        self.fc4 = MyDense(64, 32)  
        self.fc5 = MyDense(32, 10)  
  
    def call(self, inputs, training=None):  
        x = self.fc1(inputs)  
        x = tf.nn.relu(x)  
        x = self.fc2(x)  
        x = tf.nn.relu(x)  
        x = self.fc3(x)  
        x = tf.nn.relu(x)  
        x = self.fc4(x)  
        x = tf.nn.relu(x)  
        x = self.fc5(x)  
        return x
```

**JUST  
DO  
IT.**

The text "JUST DO IT." is rendered in a bold, black, sans-serif font. The letters are heavily textured with a splatter or ink-blot effect, giving them a gritty, dynamic appearance. The background is a light gray with a subtle, repeating diamond-shaped grid pattern. The overall composition is centered and minimalist.



下一课时

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模型加载与保存

**Thank You.**

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