

Keras models with the functional API

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- ▶ Once defined, `Model` can be trained and evaluated exactly like `Sequential`
- ▶ The functional API for `Model` starts with `input(s)`
- ▶ We then define `output(s)` by transforming `input(s)` iteratively.

Using the functional API

```
from keras.layers import Input, Dense
from keras.models import Model

num_classes = 10
inputs = Input(shape=(784,))

x = Dense(512, activation='relu')(inputs)
x = Dense(512, activation='relu')(x)
predictions = Dense(num_classes, activation='softmax')(x)
```

Defining and running a Model

```
model = Model(inputs=inputs, outputs=predictions)
model.compile(optimizer='sgd',
              loss='categorical_crossentropy',
              metrics=['accuracy'])

model.fit(...)  # same as before
```