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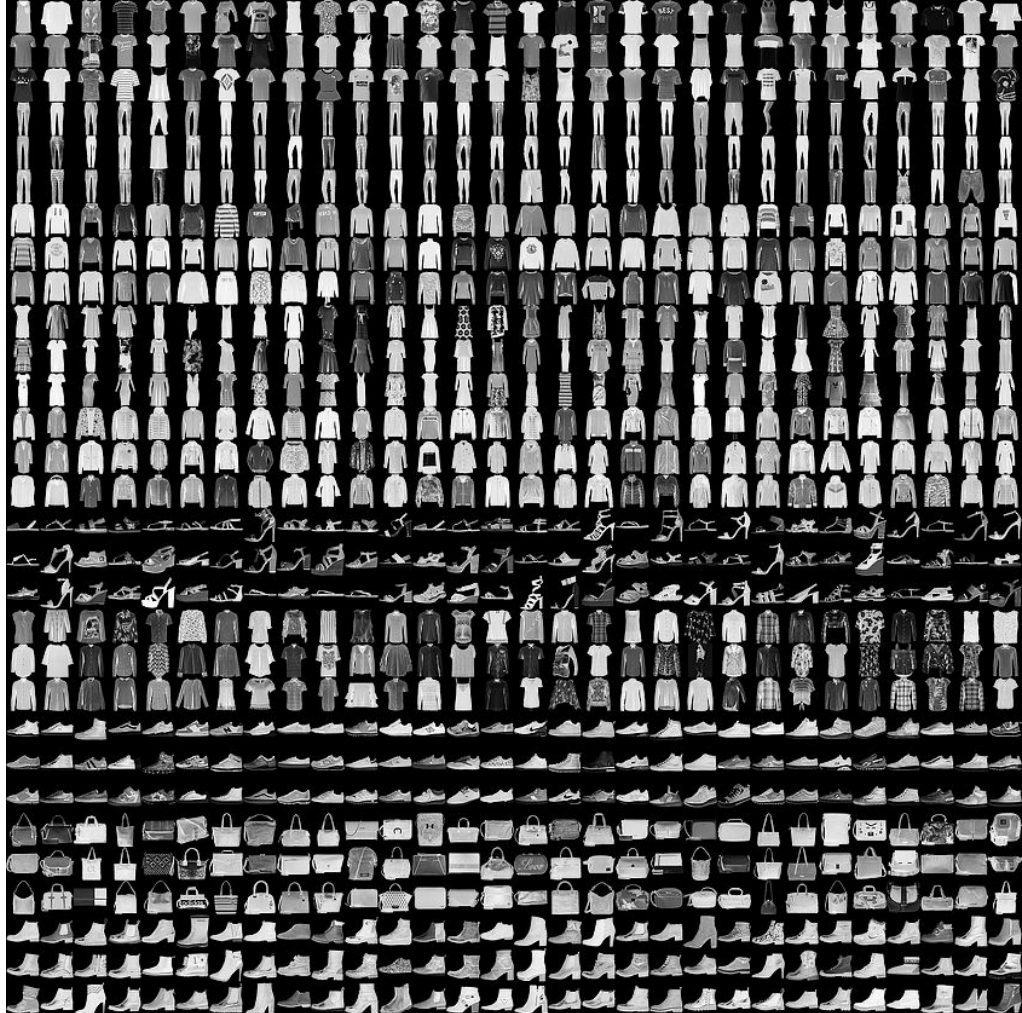
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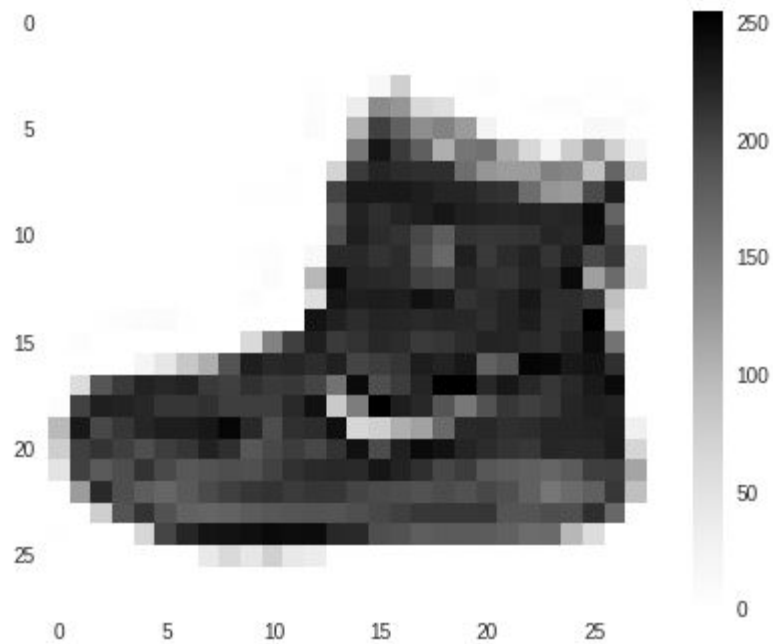
# Fashion MNIST

- 70k Images
- 10 Categories
- Images are 28x28
- Can train a neural net!



# Fashion MNIST

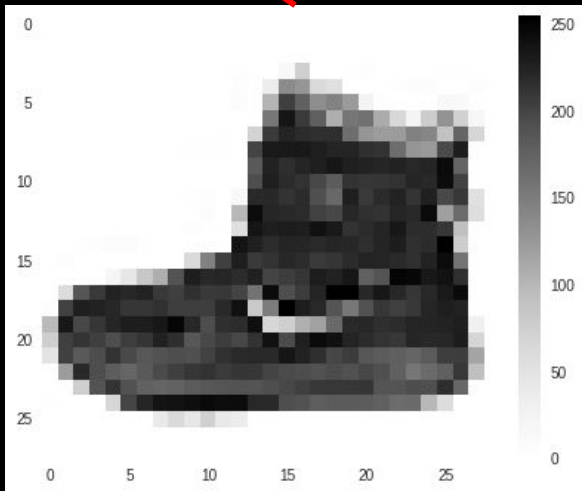
- 70k Images
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```
fashion_mnist = tf.keras.datasets.fashion_mnist  
(train_images, train_labels), (test_images, test_labels) = fashion_mnist.load_data()
```

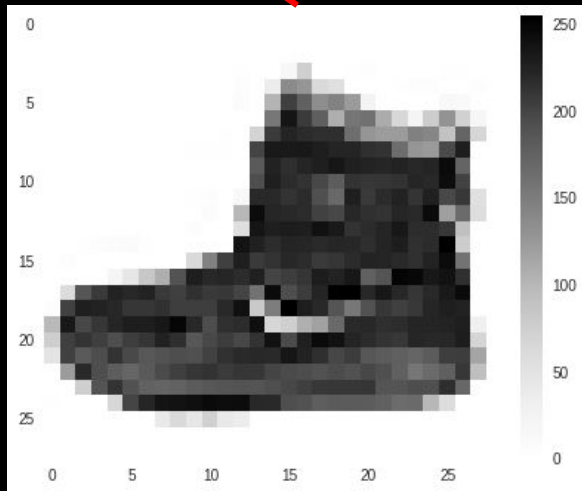
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```

09



```
import tensorflow as tf
from tensorflow import keras
```

```
mnist = tf.keras.datasets.fashion_mnist
(train_images, train_labels), (test_images, test_labels) = mnist.load_data()
```



09

09 = ankle boot;  
踝靴;  
アンクルブーツ;  
Bróg rúitín

```
model = keras.Sequential([  
    keras.layers.Flatten(),  
    keras.layers.Dense(128, activation=tf.nn.relu),  
    keras.layers.Dense(10, activation=tf.nn.softmax)  
])
```





w0

w1

w2

$$w_0x_0 + w_1x_1 + w_2x_2 \dots w_Nx_N = 9$$

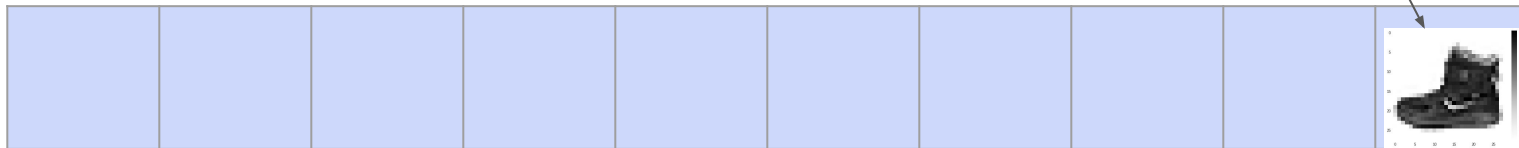


Diagram illustrating the forward pass of a neural network layer. It shows three input nodes  $x_1$ ,  $x_2$ , and  $x_3$  connected to a single output node  $\hat{y} = Q$ . A blue arrow points to the output node. Below this, a detailed view of a single neuron is shown. It takes input  $x$  and weights  $w$  and  $b$ , and outputs  $a = \sigma(z)$  where  $z = w^T x + b$ . The loss function  $\mathcal{L}(a, y)$  is also shown. The diagram is annotated with blue arrows and brackets to highlight the flow of information and the specific equations involved.

43 0 SHARE SAVE ...

```
mnist = tf.keras.datasets.fashion_mnist
(training_images, training_labels), (test_images, test_labels) = mnist.load_data()
training_images=training_images/255.0
test_images=test_images/255.0
model = tf.keras.models.Sequential([
    tf.keras.layers.Flatten(),
    tf.keras.layers.Dense(512, activation=tf.nn.relu),
    tf.keras.layers.Dense(10, activation=tf.nn.softmax)
])
model.compile(optimizer=tf.optimizers.Adam(), loss='sparse_categorical_crossentropy')
model.fit(training_images, training_labels, epochs=5)
```

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```
class myCallback(tf.keras.callbacks.Callback):  
    def on_epoch_end(self, epoch, logs={}):  
        if(logs.get('loss')<0.4):  
            print("\nLoss is low so cancelling training!")  
            self.model.stop_training = True
```

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callbacks = myCallback()
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    tf.keras.layers.Dense(10, activation=tf.nn.softmax)
])
model.compile(optimizer=tf.optimizers.Adam(), loss='sparse_categorical_crossentropy')
model.fit(training_images, training_labels, epochs=5, callbacks=[callbacks])
```