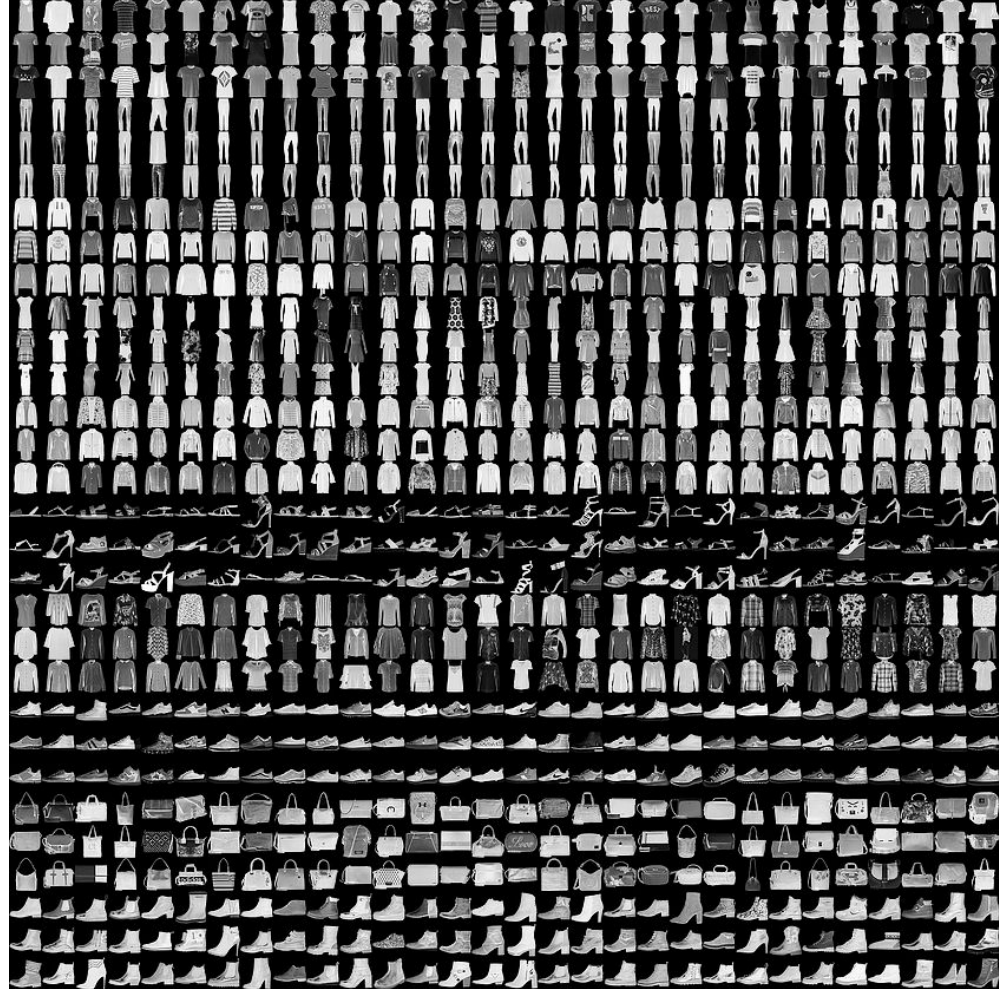




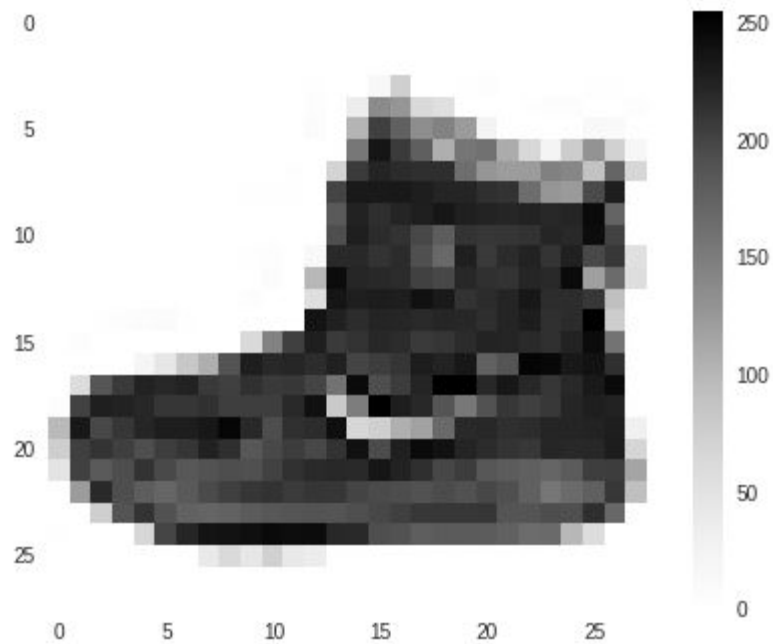
Fashion MNIST

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



Fashion MNIST

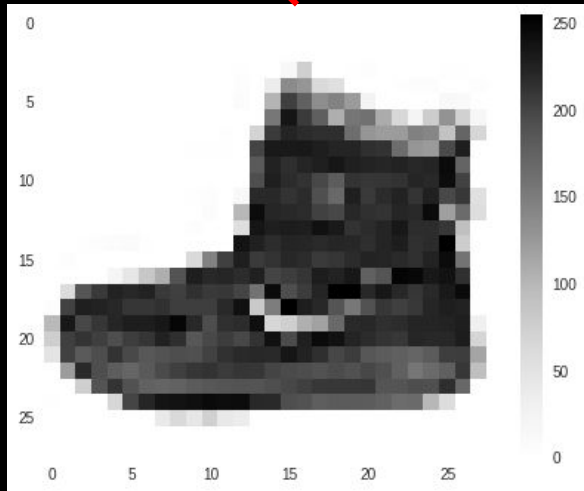
- 70k Images
- 10 Categories
- Images are 28x28
- Can train a neural net!



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



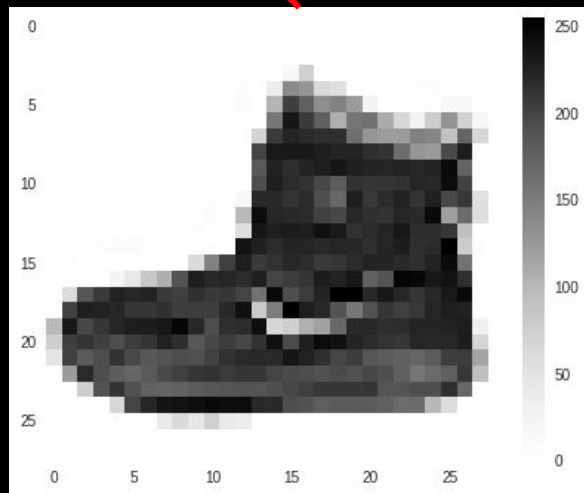
```
fashion_mnist = tf.keras.datasets.fashion_mnist  
(train_images, train_labels), (test_images, test_labels) = fashion_mnist.load_data()
```



09



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



09

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

```
model = tf.keras.Sequential([  
    tf.keras.Input(shape=(28, 28)),  
    tf.keras.layers.Flatten(),  
    tf.keras.layers.Dense(128, activation=tf.nn.relu),  
    tf.keras.layers.Dense(10, activation=tf.nn.softmax)  
])
```

```
model = tf.keras.Sequential([  
    tf.keras.Input(shape=(28, 28)),  
    tf.keras.layers.Flatten(),  
    tf.keras.layers.Dense(128, activation=tf.nn.relu),  
    tf.keras.layers.Dense(10, activation=tf.nn.softmax)  
])
```




```
model = tf.keras.Sequential([  
    tf.keras.Input(shape=(28, 28)),  
    tf.keras.layers.Flatten(),  
    tf.keras.layers.Dense(128, activation=tf.nn.relu),  
    tf.keras.layers.Dense(10, activation=tf.nn.softmax)  
])
```

```
model = tf.keras.Sequential([
    tf.keras.Input(shape=(28, 28)),
    tf.keras.layers.Flatten(),
    tf.keras.layers.Dense(128, activation=tf.nn.relu),
    tf.keras.layers.Dense(10, activation=tf.nn.softmax)
])
```



Input



w0

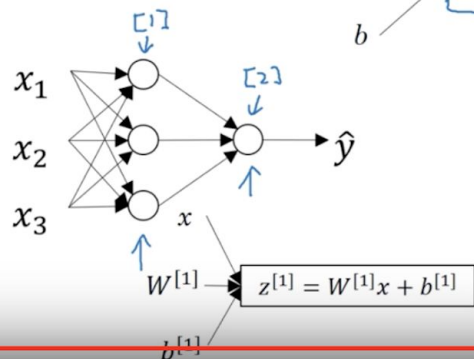
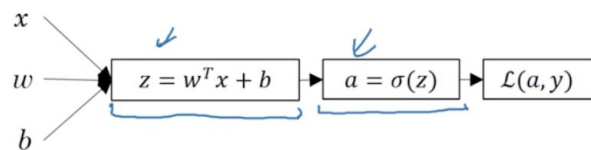
w1

w2

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

Output





1:55 / 4:26

Neural Network Overview (C1W3L01)

11,067 views

43

0

 SHARE

≡+ SAVE

...

neural Networks and Deep Learning (Course 1 of

Deeplearning.ai - 25 / 43



One hidden layer
Neural Network

Neural Networks
On 4:27

Neural Network Overview (C1W3L01)

Deeplearning.ai



Neural Network Representations (C1W3L02)

Deeplearning.ai



Computing Neural Network Output (C1W3L03)

Deeplearning.ai



Vectorizing Across Multiple Examples (C1W3L04)

Deeplearning.ai



Explanation For Vectorized Implementation (C1W3L05)

Deeplearning.ai



10:57

Activation Functions (C1W3L06)
Deeplearning.ai

■ Why Non-linear Activation Functions

Login

Username

Password

Login

Not yet a member? Sign up

Complete User Registration
system using PHP and MySQL...

Awa Melvine

5.7M views

32:43

```
fashion_mnist = tf.keras.datasets.fashion_mnist
(train_images, train_labels), (test_images, test_labels) = fashion_mnist.load_data()
training_images = training_images / 255.0
test_images = test_images / 255.0
model = tf.keras.Sequential([
    tf.keras.Input(shape=(28, 28)),
    tf.keras.layers.Flatten(),
    tf.keras.layers.Dense(128, 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)
```

```
fashion_mnist = tf.keras.datasets.fashion_mnist
(train_images, train_labels), (test_images, test_labels) = fashion_mnist.load_data()
training_images = training_images / 255.0
test_images = test_images / 255.0
model = tf.keras.Sequential([
    tf.keras.Input(shape=(28, 28)),
    tf.keras.layers.Flatten(),
    tf.keras.layers.Dense(128, 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)
```

```
class myCallback(tf.keras.callbacks.Callback):  
    def on_epoch_end(self, epoch, logs=None):  
        if logs['loss'] < 0.4:  
            print('Loss is low so cancelling training!')  
            self.model.stop_training = True
```



```
class myCallback(tf.keras.callbacks.Callback):  
    def on_epoch_end(self, epoch, logs=None):  
        if logs['loss'] < 0.4:  
            print('Loss is low so cancelling training!')  
            self.model.stop_training = True
```




```
class myCallback(tf.keras.callbacks.Callback):  
    def on_epoch_end(self, epoch, logs=None):  
        if logs['loss'] < 0.4:  
            print('Loss is low so cancelling training!')  
            self.model.stop_training = True
```



```
fashion_mnist = tf.keras.datasets.fashion_mnist
(train_images, train_labels), (test_images, test_labels) = fashion_mnist.load_data()
training_images = training_images / 255.0
test_images = test_images / 255.0
model = tf.keras.Sequential([
    tf.keras.input(shape=(28, 28)),
    tf.keras.layers.Flatten(),
    tf.keras.layers.Dense(128, 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)
```



```
fashion_mnist = tf.keras.datasets.fashion_mnist
(train_images, train_labels), (test_images, test_labels) = fashion_mnist.load_data()
training_images = training_images / 255.0
test_images = test_images / 255.0
model = tf.keras.Sequential([
    tf.keras.input(shape=(28, 28)),
    tf.keras.layers.Flatten(),
    tf.keras.layers.Dense(128, 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, callbacks=[myCallback()])
```

