

Practical implementation of mnist classifier is:

```
import tensorflow as tf
```

```
from tensorflow import keras
```

```
import numpy as np
```

```
import matplotlib.pyplot as plt
```

Load the dataset

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

Normalize the images

```
train_images = train_images / 255.0
```

```
test_images = test_images / 255.0
```

Define the model

```
model=keras.Sequential([keras.layers.Flatten(input_shape=(28,28)),keras.layers.Dense(128,activation='relu'),keras.layers.Dense(10, activation='softmax')])
```

Compile the model

```
model.compile(optimizer='adam',loss='sparse_categorical_crossentropy',metrics=['accuracy'])
```

Train the model

```
model.fit(train_images, train_labels, epochs=10)
```

Evaluate the model

```
test_loss, test_acc = model.evaluate(test_images, test_labels)
```

```
print('Test accuracy:', test_acc)
```

Make predictions

```
predictions = model.predict(test_images)
```

```
predicted_labels = np.argmax(predictions, axis=1)
```

Show some example images and their predicted labels

```
num_rows = 5
```

```
num_cols = 5
```

```
num_images = num_rows * num_cols plt.figure(figsize=(2 * 2 * num_cols, 2 *
num_rows))
for i in range(num_images):
plt.subplot(num_rows, 2 * num_cols, 2 * i + 1)
plt.imshow(test_images[i], cmap='gray') plt.axis('off')
plt.subplot(num_rows, 2 * num_cols, 2 * i + 2)
plt.bar(range(10), predictions[i])
plt.xticks(range(10))
plt.ylim([0, 1])
plt.tight_layout()
plt.title(f"Predicted label: {predicted_labels[i]}")
plt.show()
```