```
import tensorflow as tf
from tensorflow.keras.datasets import mnist
from sklearn.model_selection import KFold

# Load MNIST dataset
(x_train, y_train), (x_test, y_test) = mnist.load_data()

# Preprocess data
x_train = x_train.reshape(x_train.shape[0], 28, 28, 1).astype('float32') / 255.0
x_test = x_test.reshape(x_test.shape[0], 28, 28, 1).astype('float32') / 255.0

# Define CNN architecture
def create_model():
  model = tf.keras.Sequential([
    tf.keras.layers.Conv2D(32, kernel_size=(3, 3), activation='relu', input_shape=(28, 28, 1)),
    tf.keras.layers.MaxPooling2D(pool_size=(2, 2)),
    tf.keras.layers.Conv2D(64, kernel_size=(3, 3), activation='relu'),
    tf.keras.layers.MaxPooling2D(pool_size=(2, 2)),
    tf.keras.layers.Conv2D(128, kernel_size=(3, 3), activation='relu'),
    tf.keras.layers.Flatten(),
    tf.keras.layers.Dense(128, activation='relu'),
    tf.keras.layers.Dense(10, activation='softmax')
  ])
  return model

# K-Fold Cross-Validation
kfold = KFold(n_splits=5, shuffle=True)
accuracy, loss = [], []

for train_index, val_index in kfold.split(x_train):
  x_train_fold, x_val_fold = x_train[train_index], x_train[val_index]
  y_train_fold, y_val_fold = y_train[train_index], y_train[val_index]

  model = create_model()
  model.compile(loss='sparse_categorical_crossentropy', optimizer='adam', metrics=['accuracy'])
  model.fit(x_train_fold, y_train_fold, epochs=3, validation_data=(x_val_fold, y_val_fold))

  # Evaluate model
  val_loss, val_acc = model.evaluate(x_val_fold, y_val_fold)
  accuracy.append(val_acc)
  loss.append(val_loss)

# Print K-Fold results
print("Average Accuracy:", sum(accuracy) / len(accuracy))
print("Average Loss:", sum(loss) / len(loss))
```

```
Epoch 1/3
1500/1500 [==============================] - 59s 38ms/step - loss: 0.1464 - accuracy: 0.9540 - val_loss: 0.0731 - val_accuracy: 0.9778
Epoch 2/3
1500/1500 [==============================] - 47s 31ms/step - loss: 0.0456 - accuracy: 0.9857 - val_loss: 0.0449 - val_accuracy: 0.9861
Epoch 3/3
1500/1500 [==============================] - 49s 33ms/step - loss: 0.0329 - accuracy: 0.9895 - val_loss: 0.0344 - val_accuracy: 0.9902
375/375 [==============================] - 4s 11ms/step - loss: 0.0344 - accuracy: 0.9902
Epoch 1/3
1500/1500 [==============================] - 49s 32ms/step - loss: 0.1444 - accuracy: 0.9561 - val_loss: 0.0713 - val_accuracy: 0.9756
Epoch 2/3
1500/1500 [==============================] - 49s 32ms/step - loss: 0.0455 - accuracy: 0.9860 - val_loss: 0.0358 - val_accuracy: 0.9892
Epoch 3/3
1500/1500 [==============================] - 45s 30ms/step - loss: 0.0333 - accuracy: 0.9896 - val_loss: 0.0315 - val_accuracy: 0.9908
375/375 [==============================] - 4s 12ms/step - loss: 0.0315 - accuracy: 0.9908
Epoch 1/3
1500/1500 [==============================] - 50s 32ms/step - loss: 0.1463 - accuracy: 0.9544 - val_loss: 0.0540 - val_accuracy: 0.9835
Epoch 2/3
1500/1500 [==============================] - 51s 34ms/step - loss: 0.0454 - accuracy: 0.9856 - val_loss: 0.0526 - val_accuracy: 0.9844
Epoch 3/3
1500/1500 [==============================] - 49s 33ms/step - loss: 0.0307 - accuracy: 0.9898 - val_loss: 0.0468 - val_accuracy: 0.9859
375/375 [==============================] - 3s 8ms/step - loss: 0.0468 - accuracy: 0.9859
Epoch 1/3
1500/1500 [==============================] - 50s 33ms/step - loss: 0.1487 - accuracy: 0.9534 - val_loss: 0.0586 - val_accuracy: 0.9822
Epoch 2/3
1500/1500 [==============================] - 48s 32ms/step - loss: 0.0460 - accuracy: 0.9858 - val_loss: 0.0388 - val_accuracy: 0.9885
Epoch 3/3
1500/1500 [==============================] - 49s 33ms/step - loss: 0.0331 - accuracy: 0.9894 - val_loss: 0.0363 - val_accuracy: 0.9893
375/375 [==============================] - 3s 8ms/step - loss: 0.0363 - accuracy: 0.9893
Epoch 1/3
1500/1500 [==============================] - 48s 31ms/step - loss: 0.1465 - accuracy: 0.9551 - val_loss: 0.0517 - val_accuracy: 0.9837
Epoch 2/3
1500/1500 [==============================] - 48s 32ms/step - loss: 0.0465 - accuracy: 0.9853 - val_loss: 0.0381 - val_accuracy: 0.9887
Epoch 3/3
1500/1500 [==============================] - 48s 32ms/step - loss: 0.0320 - accuracy: 0.9896 - val_loss: 0.0424 - val_accuracy: 0.9859
375/375 [==============================] - 3s 9ms/step - loss: 0.0424 - accuracy: 0.9859
Average Accuracy: 0.9884166717529297
Average Loss: 0.0382773831486702
```