Assignments of Artificial Intelligence Lab

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1 Assignment-1

1.1 Code

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

inputs = Input((756,), name='Input_Layer')
l0 = Dense(16, activation='sigmoid', name = 'Hidden_Layer1')(inputs)
l1 = Dense(32, activation='elu', name='Hidden_Layer2')(l0)
l2 = Dense(64, activation='relu', name='Hidden_Layer3')(l1)
outputs = Dense(10, activation='softmax', name='Output_Layer')(l2)

model = Model(inputs, outputs)
model.summary()
```

Listing 1: model_build.py

1.2 Output

```
Model: "model"
_________________________________________________________________
 Layer (type)                Output Shape              Param #
=================================================================
 Input_Layer (InputLayer)    [(None, 756)]             0

 Hidden_Layer1 (Dense)       (None, 16)                12112

 Hidden_Layer2 (Dense)       (None, 32)                544

 Hidden_Layer3 (Dense)       (None, 64)                2112

 Output_Layer (Dense)        (None, 10)                650

=================================================================
Total params: 15,418
Trainable params: 15,418
Non-trainable params: 0
_________________________________________________________________
```

Listing 2: output of model

1.3 Diagram

The diagram of the required network is given in the next page.

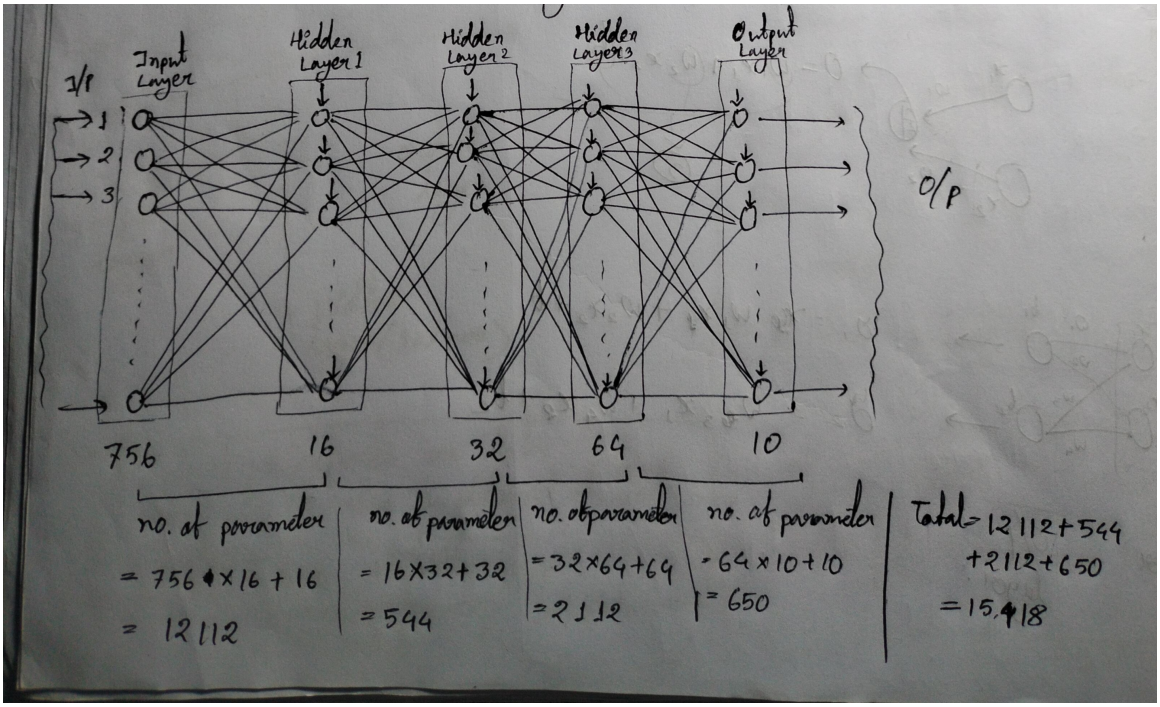

Figure 1: Diagram of the network