AML Report - LAB EXAM 2

Team Details

Team_No : G5
Team_Name : Data Crunchers
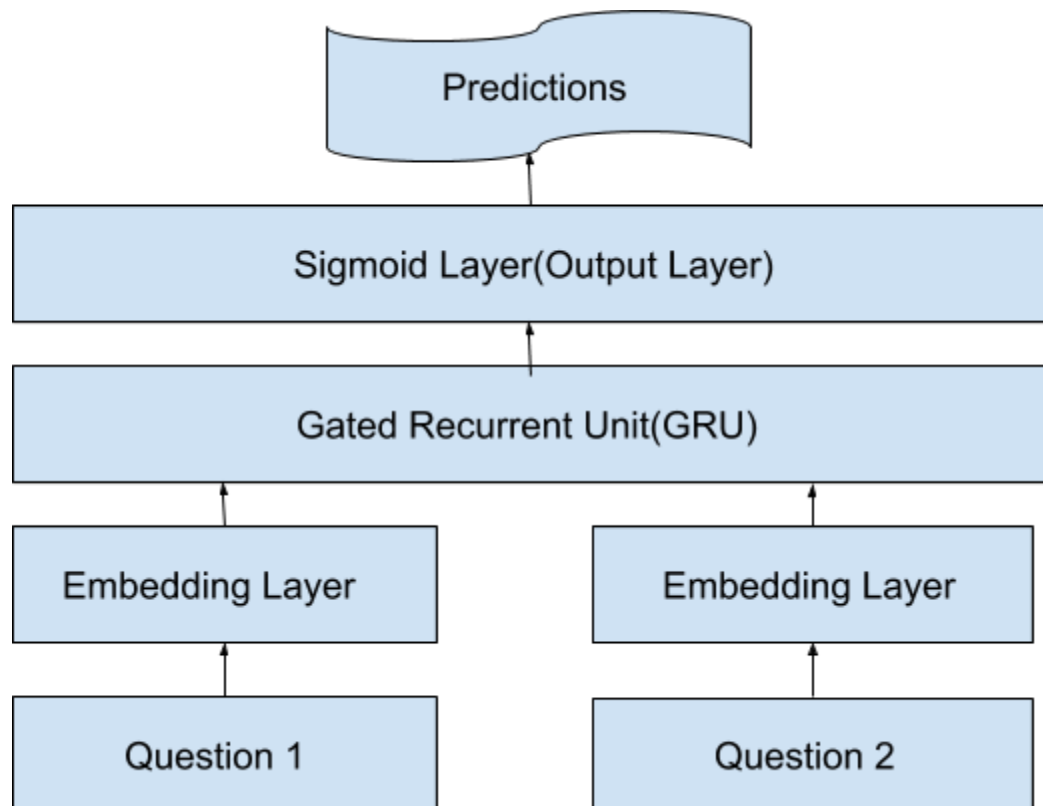
Team Member	USN	Section
NISCHITHA P	01FB15ECS193	D
SRIKAR CHUNDURY	01FB15ECS306	F
SRINIVAS SHEKAR	01FB15ECS308	F
SWATI N H	01FB15ECS320	F

Problem Statement :

Develop a GRU based model that implements the architecture described.You are required to train, validate and test your implementation using the dataset provided.

Results :

● Model - Architecture

Details:
- ○ Hyper parameters : Batch size=128
- ○ Number of epochs trained for : 6
- ○ Dataset size used : 40K samples (85:15 train test ratio) Quora's questions dataset

*** Used GloVe dataset of 100 dimensions for word embeddings.

- Observations -
  - ○ Training accuracy : 0.8757
  - ○ Training losses : 0.3009
  - ○ Validation accuracy : 0.7365
  - ○ Validation losses : 0.6119

- Screenshots :

```
Layer (type)                    Output Shape        Param #     Connected to
==================================================================================================
input_1 (InputLayer)            (None, 10)          0

input_2 (InputLayer)            (None, 10)          0

embedding_1 (Embedding)         (None, 1000, 100)   2459900     input_1[0][0]

embedding_2 (Embedding)         (None, 1000, 100)   2305400     input_2[0][0]

gru_1 (GRU)                     (None, 256)         274176      embedding_1[0][0]
                                                                embedding_2[0][0]

multiply_1 (Multiply)           (None, 256)         0           gru_1[0][0]
                                                                gru_1[1][0]

dense_1 (Dense)                 (None, 1)           257         multiply_1[0][0]
==================================================================================================
Total params: 5,039,733
Trainable params: 274,433
Non-trainable params: 4,765,300
```

```
Train on 34000 samples, validate on 6000 samples
Epoch 1/6
 - 21s - loss: 0.6196 - acc: 0.6554 - val_loss: 0.6062 - val_acc: 0.6675
Epoch 2/6
 - 19s - loss: 0.5733 - acc: 0.7020 - val_loss: 0.5693 - val_acc: 0.7080
Epoch 3/6
 - 19s - loss: 0.5251 - acc: 0.7408 - val_loss: 0.5560 - val_acc: 0.7213
Epoch 4/6
 - 19s - loss: 0.4667 - acc: 0.7823 - val_loss: 0.5525 - val_acc: 0.7245
Epoch 5/6
 - 19s - loss: 0.3927 - acc: 0.8247 - val_loss: 0.5658 - val_acc: 0.7387
Epoch 6/6
 - 19s - loss: 0.3009 - acc: 0.8757 - val_loss: 0.6119 - val_acc: 0.7365
[[-0.01952542 -0.04518711  0.2583499  ... -0.20955265 -0.41580355
   0.04806659]
 [-0.00276912  0.0384875  -0.01539143 ... -0.13724561 -0.00242448
   0.00796376]
 [-0.31229267 -0.09828724 -0.5365517  ...  0.03051886  0.06618323
   0.0053877 ]
 ...
 [-0.00371714 -0.02841673  0.0380527  ...  0.43233168  0.0138416
   0.11882089]
 [ 0.07168738  0.16732916 -0.16677406 ... -0.0808293   0.0062018
   0.17098999]
 [-0.03979788 -0.11168104  0.2096951  ... -0.17704381  0.03375212
   0.49670592]]
PS D:\SEM_7\AML\exam_2\t2_exam_paper>
```