

---

# Assignment 4

---

Michele Cerú  
mc3784@nyu.edu

## 1 nngraph

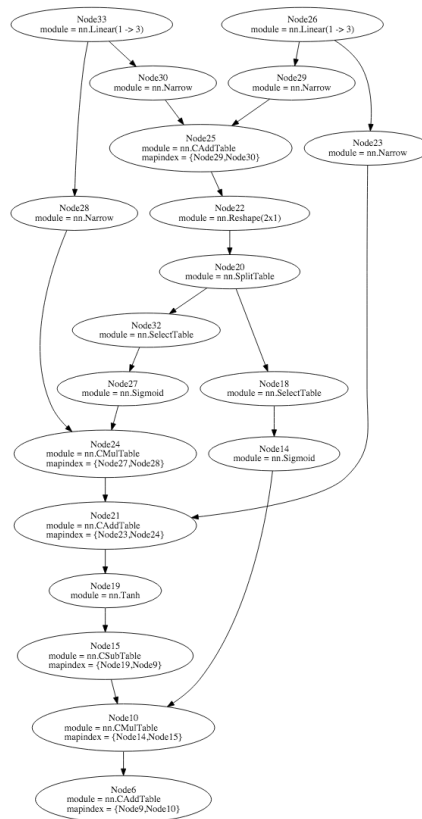


Figure 1: GRU cell graph

## 2 Language modelling

### 2.1 generating sequences

### 2.2 Suggested improvements to your model

seq length	layers	rnn size	dropout	vocab size	best Perplexity
20	2	200	0	10000	119.756
30	2	200	0	10000	114.548
15	2	200	0	10000	195.712
30	4	200	0	10000	120.359
40	3	200	0	15000	137.629
40	5	200	0.2	10000	135.020
40	4	400	0.2	10000	107.970
30	2	400	0.2	10000	93.449
30	4	400	0.3	10000	102.013
30	4	400	0.5	10000	113.420
30	2	400	0.5	10000	96.340
30	2	600	0.4	10000	87.368
30	2	500	0.3	10000	89.794

seq length	layers	rnn size	dropout	vocab size	best Perplexity
20	2	200	0	10000	182.217
15	2	200	0	10000	195.712
30	2	600	0.4	10000	97.056
30	2	700	0.5	10000	101.021

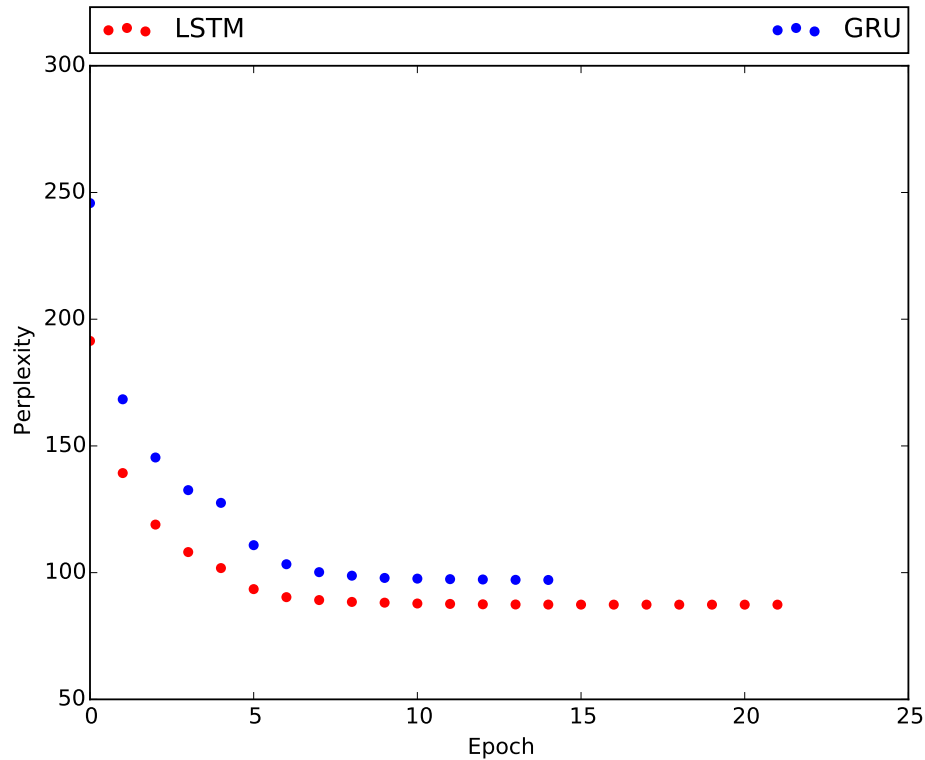


Figure 2: Second best performance figures. We added a layer that rotates the images by random angles drawn from a normal distribution with zero mean and 0.2 standard deviation.

**References**

- [1] <http://cs.nyu.edu/~mc3784/model.net87.367553621956>