Hochschule Bonn-Rhein-Sieg

R&D Proposal

Recognizing textual entailment : A comprehensive evaluation of the existing state of the art techniques

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Asessment

- The first paper I tried to train was Enhanced LSTM for Natural Language Inference,Chen, Qian and Zhu, Xiaodan and Ling, Zhenhua and Wei, Si and Jiang, Hui and Inkpen, Diana,published in Cornell university library, which was implemented in theano.
- I tried to train it in workstation of at work lab(without using gpu).
- The implementation used SNLI dataset with 570 thousand labelled sentences.
- The model kept on training for 3 days and even the first epoch was not over , so I had to stop the process.

Asessment

- Theano's development has been ceased , so the second paper I tried to train was Natural Language Inference over Interaction Space,Yichen Gong, Heng Luo, Jian Zhang, published in Cornell university library in Sep 2017, as it has been implemented in tensorflow.
- I tried to train it using GTX-Geforce 860m gpu , with 2GB memory.
- The property of tensorflow is that it automatically allocates memory for a particular task .
- The model used 15 percent of Multinli dataset and I also reduced the batch size from 70 to 7, still I got the error that process is killed.
- This error occurred because of the shortage of memory.

Error

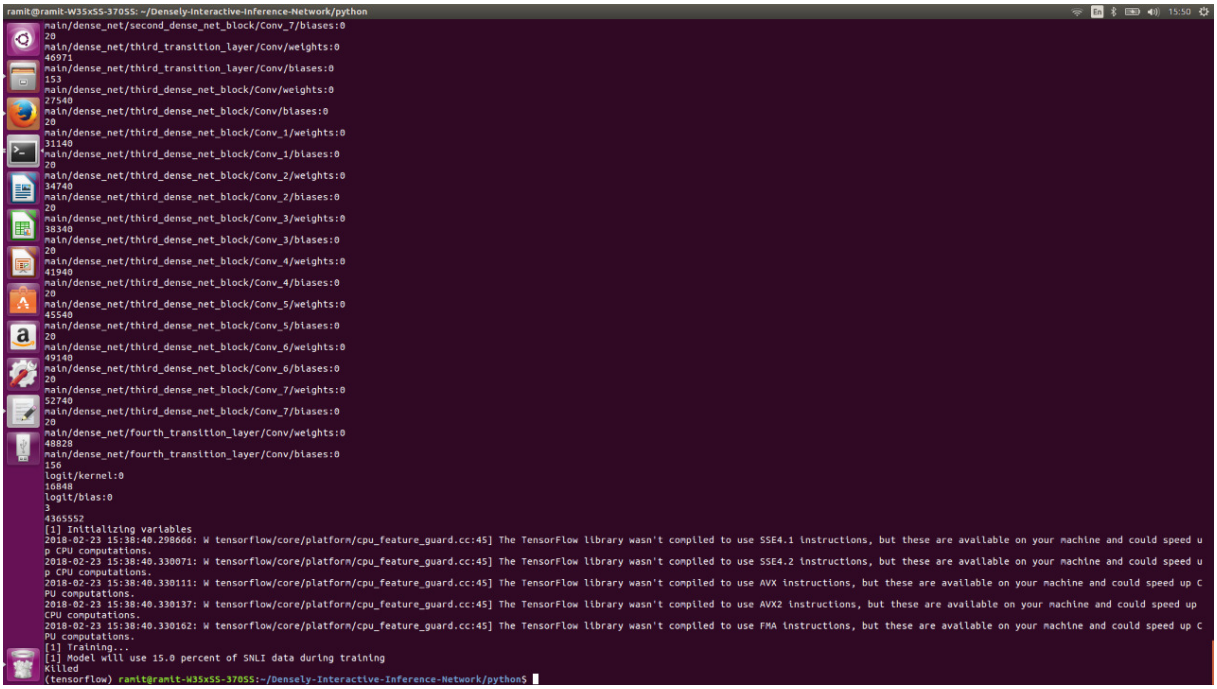

Figure 1: Error log

Asessment

- The third paper I tried to train was DiSAN: Directional Self-Attention Network for RNN/CNN-Free Language Understanding Tao Shen, Tianyi Zhou, Guodong Long, Jing Jiang, Shirui Pan, Chengqi Zhang,published in Cornell university library, which was implemented in tensorflow.
- I tried to train it using using GTX-Geforce 860m gpu , with 2GB memory.
- The implementation used SNLI dataset with 570 thousand labelled sentences.
- The model kept on training for 5 minutes , then I got error that resource is exhausted.
- Then I tried to reduce the batch size from 64 to 4 , still I got the same error.
- The error occurs because tensorflow automatically allocates memory for a given process and 2GB GPU is not sufficient for this model.