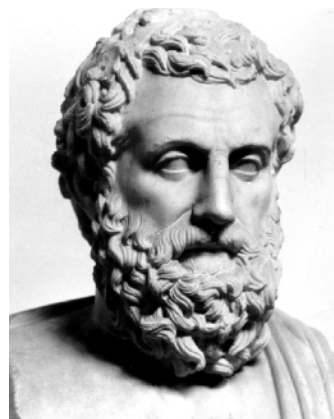


Artificial Intelligence For NLP Lesson- 10

人工智能与自然语言处理
课程组

2019.Sept. 08



Outline

- 1. Review
 - What's the neural networks?
 - What's softmax, cross-entropy?
- 2. Build a neural network framework from scratch
 - What's tensorflow
 - Pytorch, keras

What's tensorflow?



tensor

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's'
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'r'

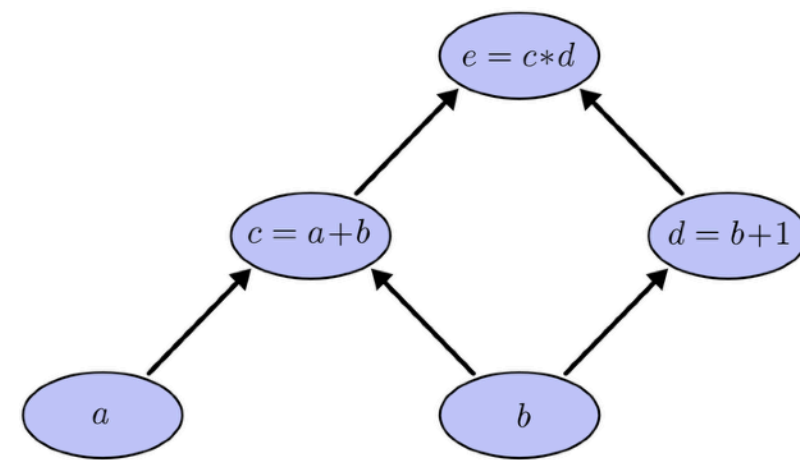
tensor of dimensions [6]
(vector of dimension 6)

3	1	4	1
5	9	2	6
5	3	5	8
9	7	9	3
2	3	8	4
6	2	6	4

tensor of dimensions [6,4]
(matrix 6 by 4)

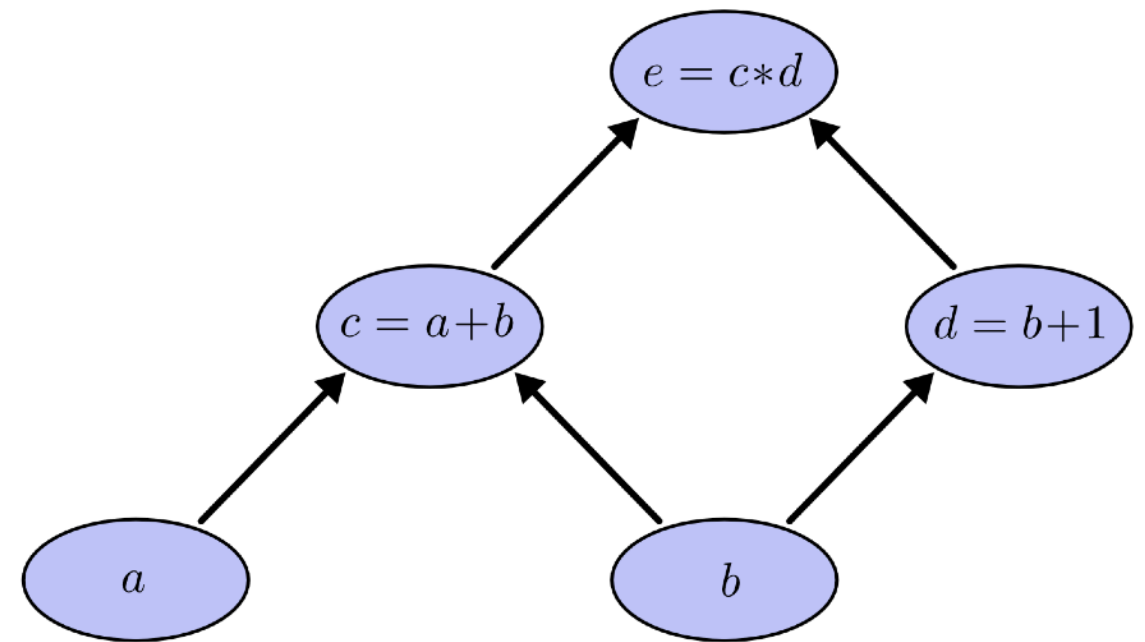
2	7	8	8	1	8
2	8	5	0	5	5
2	3	3	0	2	8
7	4	7	1	5	2

tensor of dimensions [4,4,2]



What do we need in neural networks?

- 1. Training Data
- 2. Parameter(Weights)
- 3. Operator
- 4. Loss
- 5. Optimizer(SGD, Adam)



tensor

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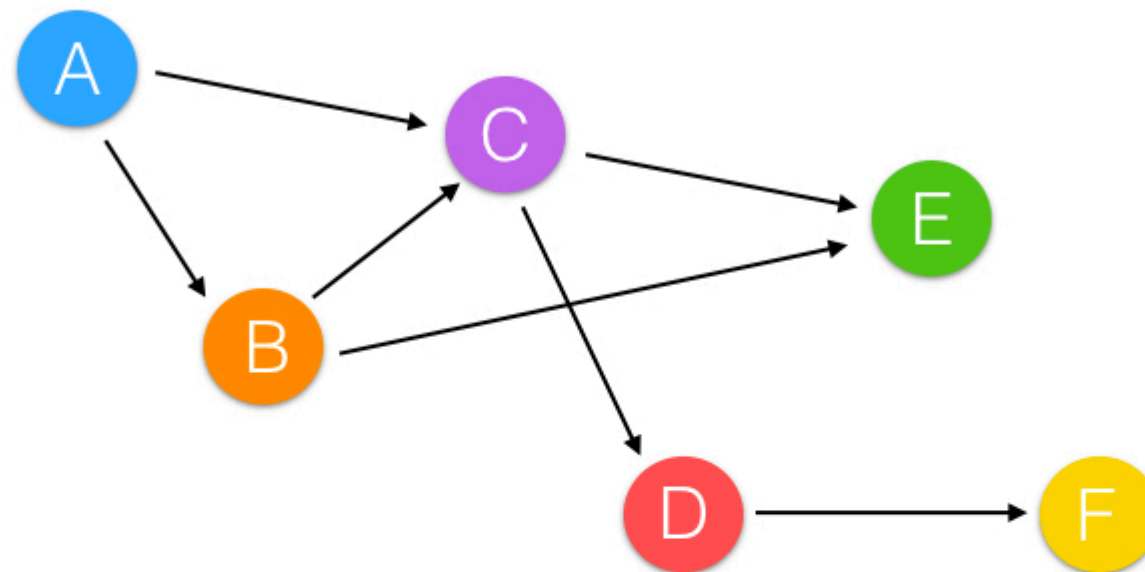
tensor of dimensions [6]
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3	1	4	1
5	9	2	6
5	3	5	8
9	7	9	3
2	3	8	4
6	2	6	4

tensor of dimensions [6,4]
(matrix 6 by 4)

2	7	8	2	8	8
2	8	4	5	9	0
2	3	5	3	6	0
7	4	7	1	3	5

tensor of dimensions [4,4,2]



Topologic Sort

MiniFlow - Build a Neural Network Framework

- Pytorch: <https://github.com/pytorch/pytorch/blob/master/torch/nn/modules/activation.py>
-

Assignment

- Reading tensorflow and pytorch tutorial and make practice.
- <https://github.com/aymericdamien/TensorFlow-Examples>
- <https://github.com/yunjey/pytorch-tutorial/tree/master/tutorials>
- Using word2vec + fully connected neural networks to finish “豆瓣评论” classification.
- https://github.com/Computing-Intelligence/datasource/blob/master/movie_comments.csv