

INPUT

["매우", "재밋는", "딥러닝", "시간"]



nn.Embedding

매우

0.1	0.2	0.3
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재밋는

0.2	0.3	0.4
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딥러닝

0.3	0.4	0.5
-----	-----	-----

시간

0.4	0.5	0.6
-----	-----	-----

concat



0.1	0.2	0.3	0.2	0.3	0.4	0.3	0.4	0.5	0.4	0.5	0.6
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- MAX_SEQ_LENGTH : 4

- EMBED_SIZE : 3

매우

0.1	0.2	0.3
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재밋는

0.2	0.3	0.4
-----	-----	-----

답러닝

0.3	0.4	0.5
-----	-----	-----

시간

0.4	0.5	0.6
-----	-----	-----

- MAX_SEQ_LENGTH : 4
- EMBED_SIZE : 3
- Filter_sizes = [3, 4, 5]
- Out_Chns = 30
- Kernel_size = [3*3, 4*3, 5*3] = [9, 12, 15]

- Kernel_size = (Filter_sizes[i] == 3) * embed_size

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-1	-1	-1	-1	-1	-1	-1	-1	-1
----	----	----	----	----	----	----	----	----

0	0	0	0	0	0	0	0	0
---	---	---	---	---	---	---	---	---

⋮

-1	0	0.1	0.2	0.5	0	0	1	1
----	---	-----	-----	-----	---	---	---	---

0.1	0.2	0.3	0.2	0.3	0.4	0.3	0.4	0.5	0.4	0.5	0.6
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Conv1d

- feature_map_size : (MS - FS)*ES + 1
- Ex. (4-3)*3 + 1 = 4

* 최종 output shape

>> (batch_size, out_chs, feature_map_size)

- Input: (N, C_{in}, L_{in})
- Output: (N, C_{out}, L_{out}) where

$$L_{out} = \left\lfloor \frac{L_{in} + 2 \times \text{padding} - \text{dilation} \times (\text{kernel_size} - 1) - 1}{\text{stride}} + 1 \right\rfloor$$

매우

0.1	0.2	0.3
-----	-----	-----

재밋는

0.2	0.3	0.4
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답러닝

0.3	0.4	0.5
-----	-----	-----

시간

0.4	0.5	0.6
-----	-----	-----

- MAX_SEQ_LENGTH : 4
- EMBED_SIZE : 3
- Filter_sizes = [1, 2, 3]
- Out_Chns = 30
- Kernel_size = [3*3, 4*3, 5*3] = [9, 12, 15]

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-1	-1	-1	-1	-1	-1	-1	-1	-1
----	----	----	----	----	----	----	----	----

0	0	0	0	0	0	0	0	0
---	---	---	---	---	---	---	---	---

⋮

-1	0	0.1	0.2	0.5	0	0	1	1
----	---	-----	-----	-----	---	---	---	---

0.1	0.2	0.3	0.2	0.3	0.4	0.3	0.4	0.5	0.4	0.5	0.6
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

-2.7			
------	--	--	--

$$(-1 \times 0.1) + (-1 \times 0.2) + (-1 \times 0.3) + (-1 \times 0.2) + (-1 \times 0.3) + (-1 \times 0.4) + (-1 \times 0.3) + (-1 \times 0.4) + (-1 \times 0.5)$$

매우

0.1	0.2	0.3
-----	-----	-----

재밋는

0.2	0.3	0.4
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딥러닝

0.3	0.4	0.5
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시간

0.4	0.5	0.6
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- EMBED_SIZE : 3
- Filter_sizes = [3, 4, 5]
- Out_Chns = 30
- Kernel_size = [3*3, 4*3, 5*3] = [9, 12, 15]

0.1	0.2	0.3	0.2	0.3	0.4	0.3	0.4	0.5	0.4	0.5	0.6
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

-1	-1	-1	-1	-1	-1	-1	-1	-1
----	----	----	----	----	----	----	----	----

0	0	0	0	0	0	0	0	0
---	---	---	---	---	---	---	---	---

⋮

-1	0	0.1	0.2	0.5	0	0	1	1
----	---	-----	-----	-----	---	---	---	---

-2.7	-3.0		
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$$(-1 \times 0.2) + (-1 \times 0.3) + (-1 \times 0.2) + (-1 \times 0.3) + (-1 \times 0.4) + (-1 \times 0.3) + (-1 \times 0.4) + (-1 \times 0.5) + (-1 \times 0.4)$$

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매우

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재밋는

0.2	0.3	0.4
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답러닝

0.3	0.4	0.5
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시간

0.4	0.5	0.6
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0.1	0.2	0.3	0.2	0.3	0.4	0.3	0.4	0.5	0.4	0.5	0.6
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

-1	-1	-1	-1	-1	-1	-1	-1	-1
----	----	----	----	----	----	----	----	----

0	0	0	0	0	0	0	0	0
---	---	---	---	---	---	---	---	---

⋮

-1	0	0.1	0.2	0.5	0	0	1	1
----	---	-----	-----	-----	---	---	---	---

-2.7	-3.0	-3.3	
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매우

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0.1	0.2	0.3	0.2	0.3	0.4	0.3	0.4	0.5	0.4	0.5	0.6
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

-2.7	-3.0	-3.3	-3.6
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-1	-1	-1	-1	-1	-1	-1	-1	-1
----	----	----	----	----	----	----	----	----

0	0	0	0	0	0	0	0	0
---	---	---	---	---	---	---	---	---

⋮

-1	0	0.1	0.2	0.5	0	0	1	1
----	---	-----	-----	-----	---	---	---	---

매우

0.1 0.2 0.3

재밋는

0.2 0.3 0.4

딥러닝

0.3 0.4 0.5

시간

0.4 0.5 0.6

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0.1 0.2 0.3 0.2 0.3 0.4 0.3 0.4 0.5 0.4 0.5 0.6

-1 -1 -1 -1 -1 -1 -1 -1 -1

0 0 0 0 0 0 0 0 0

-2.7 -3.0 -3.3 -3.6

0 0 0 0

⋮



⋮

-1 0 0.1 0.2 0.5 0 0 1 1

1.02 0.98 0.86 1.20

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매우

0.1	0.2	0.3
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재밋는

0.2	0.3	0.4
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답러닝

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0.1	0.2	0.3	0.2	0.3	0.4	0.3	0.4	0.5	0.4	0.5	0.6
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

-1	-1	-1	-1	-1	-1	-1	-1	-1
----	----	----	----	----	----	----	----	----

0	0	0	0	0	0	0	0	0
---	---	---	---	---	---	---	---	---

-2.7	-3.0	-3.3	-3.6
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0	0	0	0
---	---	---	---

-0.991	-0.995	-0.997	-0.998
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0.	0.	0.	0.
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⋮



⋮



⋮

-1	0	0.1	0.2	0.5	0	0	1	1
----	---	-----	-----	-----	---	---	---	---

1.02	0.98	0.86	1.20
------	------	------	------

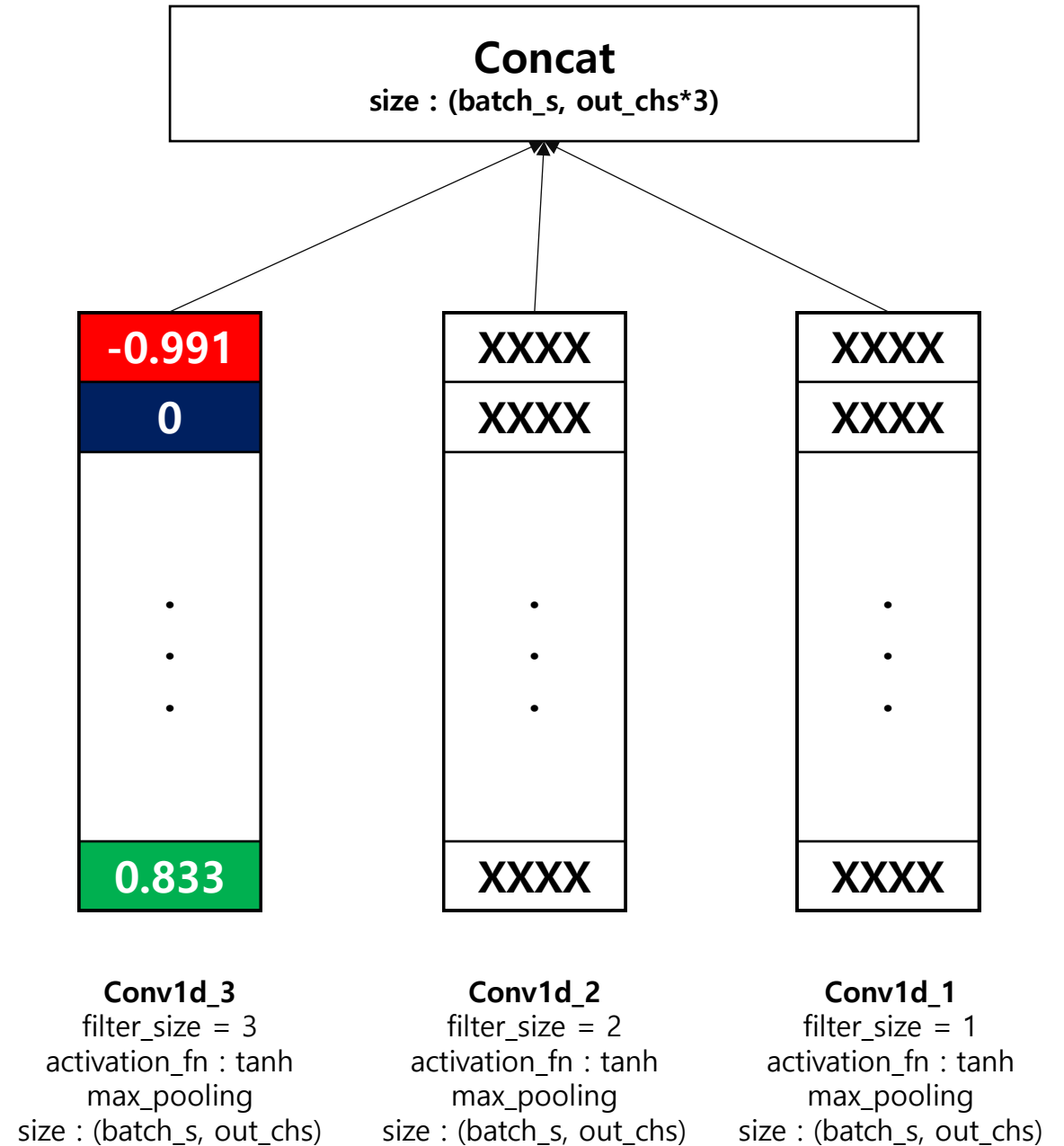
0.769	0.753	0.696	0.833
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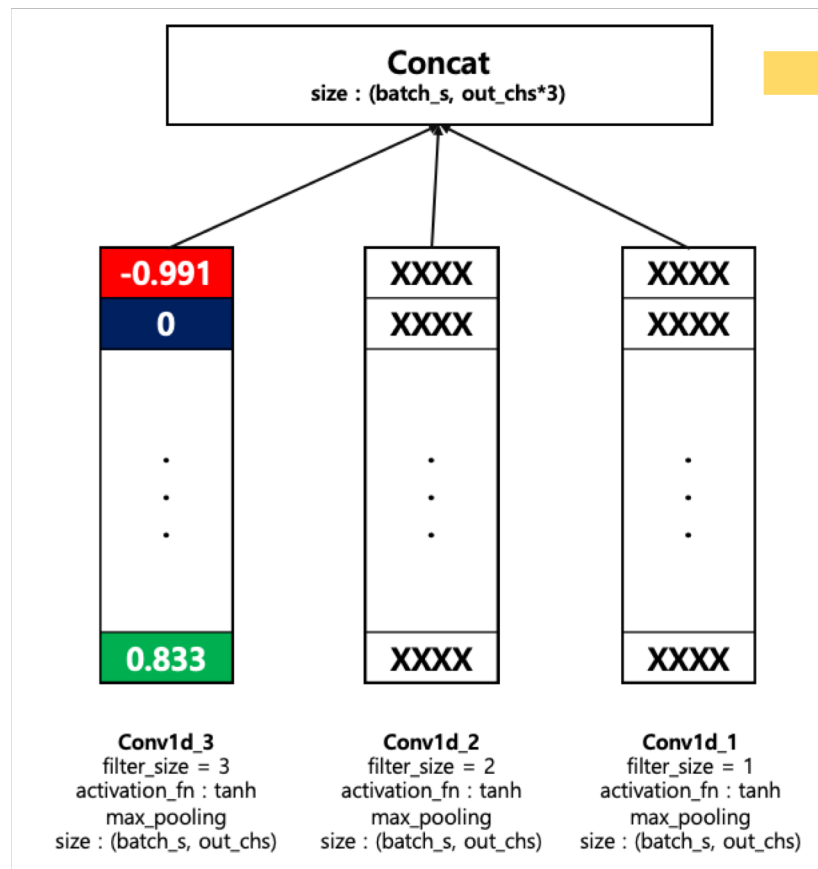
Activation Function
- ex. tanh / relu / sigmoid ...

Max Pooling

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-0.991	-0.995	-0.997	-0.998
0.	0.	0.	0.
⋮			
0.769	0.753	0.696	0.833





Dropout

Fully_Connected_layer
input_size : (batch_s, out_chs*3)
ouput_size : (num_classes)

softmax

Loss_Function
ex. nn.CrossEntropyLoss()
nn.BCELoss()