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“ ”, “ — ” ,
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1. —
2. —
3. “ ” —
4. —

(Collins-Loftus ACT-R
)
CNN Transformer ,

??????(Distributed Representation)

1.1 ?????

“ ” (0x7FFF) , “ ”

“ ” , “ ”

1.2 ?????

2.2 ??????????

" " "AGI 10 " , \$w_{ij}\$
 :

$$\Delta w_{ij} = \eta \cdot a_i \cdot a_j$$

\$\eta\$, \$a_i\$ \$a_j\$

(LTP, Long-Term Potentiation) —NMDA
 AMPA ,

2.3 ??????????

learning rate:

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2.4 ??????????

(LTD) ,
 —

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3.1 ??????????"??"

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- :

- σ = sigmoid
- \tanh = tanh
- ReLU = ReLU

?????????:??????

Hubel & Wiesel (1959) : Gabor filter, Gabor filter

6.1 ?????? CNN:????????

Hubel & Wiesel (1959-60) Gabor filter, Gabor filter :

- **V1** : Gabor filter (CNN)
- **V2** : Gabor filter
- **V4** : Gabor filter
- **IT** (IT) : Gabor filter (CNN)

CNN Yann LeCun (1988) LeNet Hubel-Wiesel

Hubel & Wiesel :

- $\text{local receptive field}$ → CNN
- $\text{local receptive field}$ → CNN
- $\text{local receptive field}$ → CNN + bias
- $\text{local receptive field}$ → CNN

Hubel & Wiesel (1959) : "Gabor filter" Gabor filter, Gabor filter — CNN

6.2 ????? ? ???????

CNN :

- $\text{local receptive field}$ ↔ CNN
- $\text{local receptive field}$ ↔ CNN
- $\text{local receptive field}$ ↔ CNN
- $\text{local receptive field}$ ↔ CNN + **LTP**
- **Batch training** ↔ CNN
- epoch ↔ CNN
- $\text{local receptive field}$ ↔ CNN
- **Experience replay(RL)** ↔ CNN

[[RAG()]], LLM

- [] : [] + [] , []
- [] / [] : []
- [] : []
- [] : [] " [] " [] " [] "
- [] : [] , []

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[] , [] [] CNN [] Transformer [] RL []

[] " [] " [] , [] , [] []