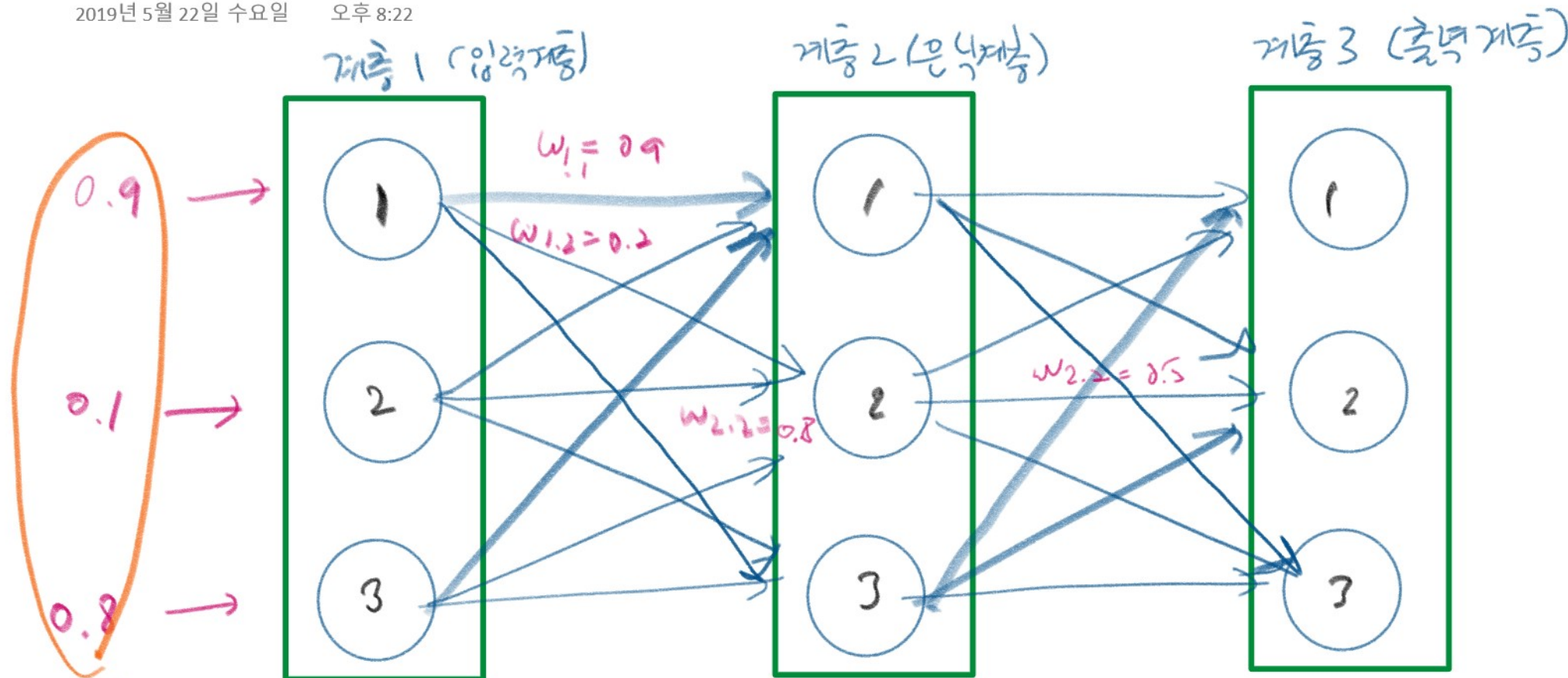


CH9_행렬-신경망

2019년 5월 22일 수요일 오후 8:22

~ 13



입력값 행렬

$$I = \begin{pmatrix} 0.9 \\ 0.1 \\ 0.8 \end{pmatrix}$$

이것은
출력값 행렬

$$X = W \cdot I$$

↓
가중치 행렬

$$W_{\text{input_hidden}}$$

$$\square \times \square$$

: 3x3 prod.?

↓
~ input R hidden?

(X) X_{hidden}

= ...

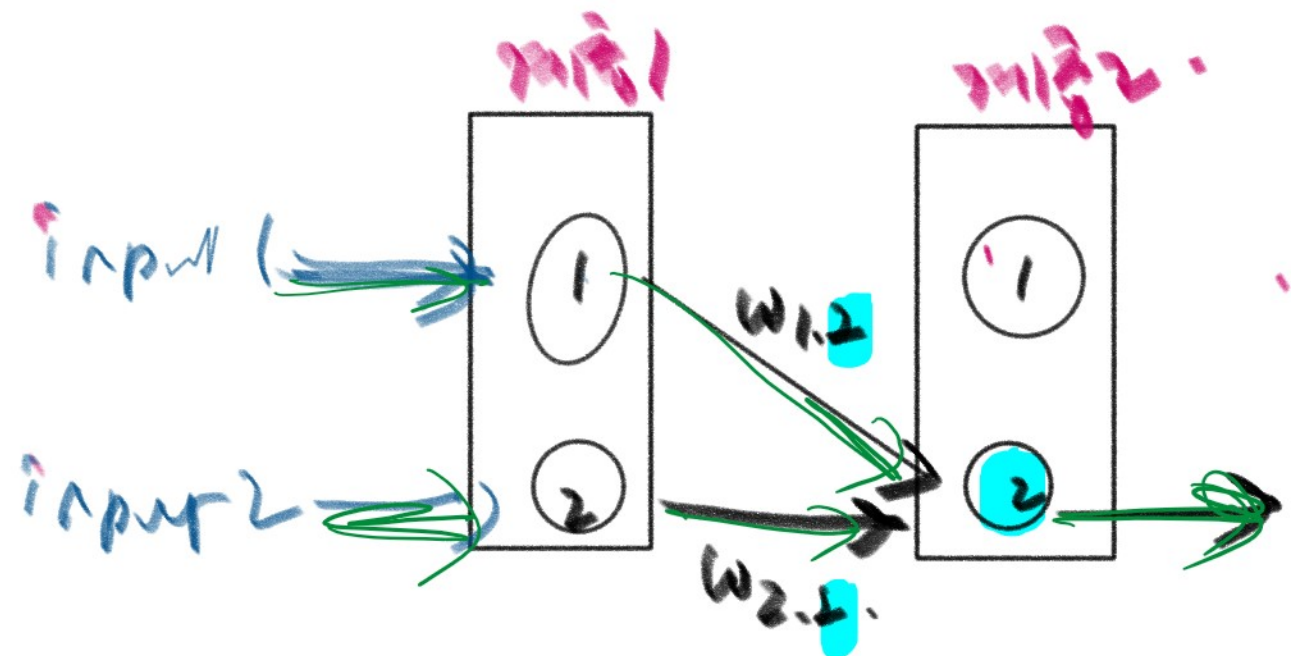
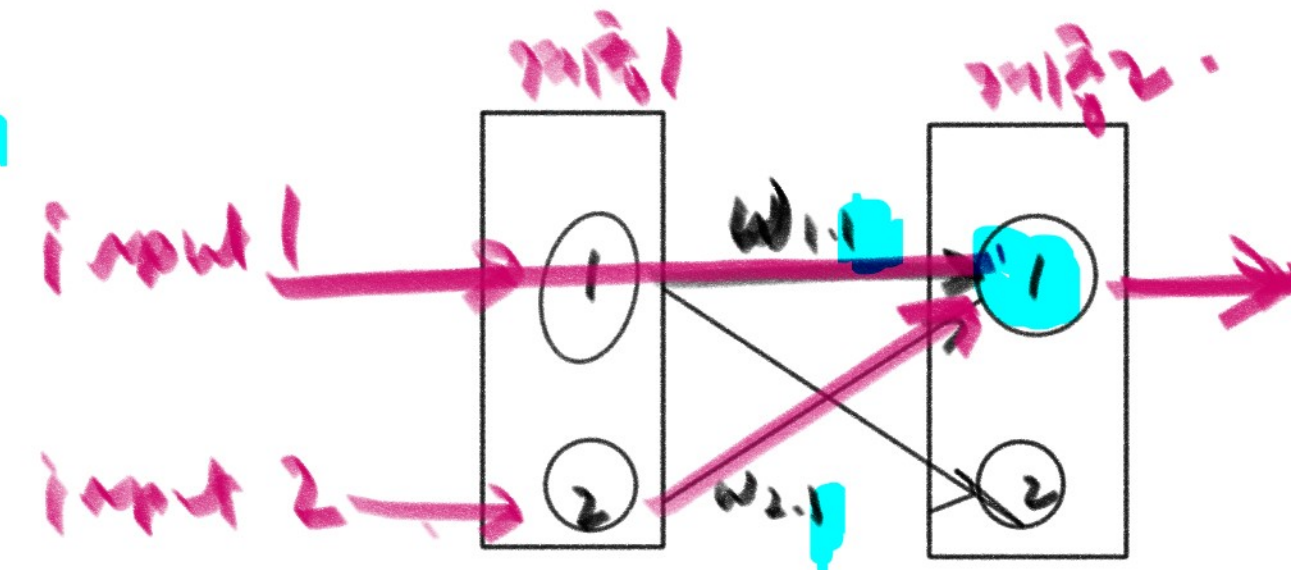
$$= \begin{pmatrix} w_{1,1} & w_{2,1} & w_{3,1} \\ w_{1,2} & w_{2,2} & w_{3,2} \\ w_{1,3} & w_{2,3} & w_{3,3} \end{pmatrix}$$

전 계층.
 가산도 역시 시퀀스화,
 마가-백계층
 1로 쓸리는 가중치...?

1
2
3

$W_{hidden-output}$

3x3.



2R(2)

2가 2로 가중치

x_a

마지막 제2

는 101

은 101

이 101, 101, 101

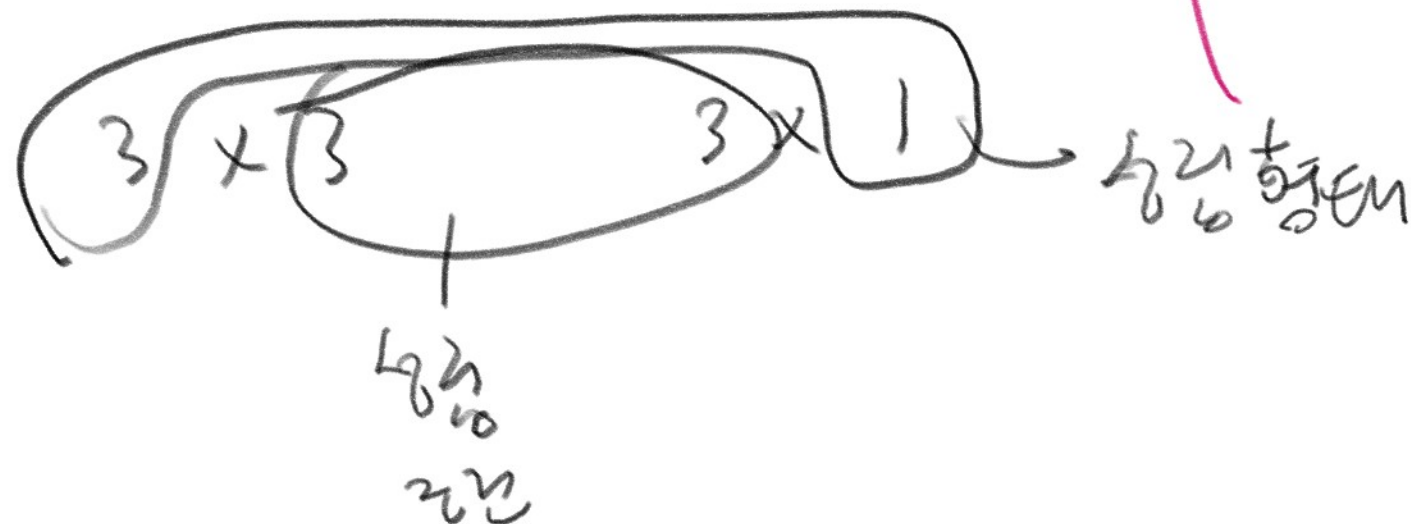
x_1

1?

$$= W_{\text{input_hidden}} \cdot I$$

$$\begin{pmatrix} 0.9 & 0.3 & 0.4 \\ 0.2 & 0.8 & 0.2 \\ 0.1 & 0.5 & 0.6 \end{pmatrix}$$

$$\begin{pmatrix} 0.9 \\ 0.1 \\ 0.8 \end{pmatrix}$$



$$\begin{pmatrix} 0.9 \cdot 0.9 + 0.3 \cdot 0.1 + 0.4 \cdot 0.8 \\ 0.2 \cdot 0.9 + 0.8 \cdot 0.1 + 0.2 \cdot 0.8 \\ 0.1 \cdot 0.9 + 0.5 \cdot 0.1 + 0.6 \cdot 0.8 \end{pmatrix}$$

$$\begin{pmatrix} w_{11} & w_{21} & w_{31} \\ w_{12} & w_{22} & w_{32} \\ w_{13} & w_{23} & w_{33} \end{pmatrix} \begin{matrix} \text{--- } 1^{\text{st}} \text{ hidden, } \textcircled{1} \text{ "h"} \text{ } \overline{\text{H}} \\ \text{--- } 2^{\text{nd}} \text{ hidden, } \textcircled{2} \text{ "h"} \text{ } \overline{\text{H}} \end{matrix}$$

input - 1

$+0.8$
 $.0.8$
 $.0.8$



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 100


$$w_{1.1} \cdot \dot{x}_1 + w_{2.1} \cdot \dot{x}_2$$

$$w_{1.2} \cdot \dot{x}_1 + w_{2.2} \cdot \dot{x}_2$$


$$\begin{pmatrix} w_{11} & w_{21} & w_{31} \\ w_{12} & w_{22} & w_{32} \\ w_{13} & w_{23} & w_{33} \end{pmatrix} \cdot \begin{pmatrix} i_1 \\ i_2 \\ i_3 \end{pmatrix} = \begin{pmatrix} w_{11} i_1 + w_{12} i_2 + w_{13} i_3 \\ w_{21} i_1 + w_{22} i_2 + w_{23} i_3 \\ w_{31} i_1 + w_{32} i_2 + w_{33} i_3 \end{pmatrix}$$

(Note: In the original image, the weights w_{11}, w_{12}, w_{13} in the first row of the result vector are highlighted in green and blue.)

11

✓

$$+ w_{21} \dot{\theta}_2 + w_{31} \dot{\theta}_3$$

$$+ w_{22} \dot{\theta}_2 + w_{32} \dot{\theta}_3$$

$$+ w_{23} \dot{\theta}_2 + w_{33} \dot{\theta}_3$$

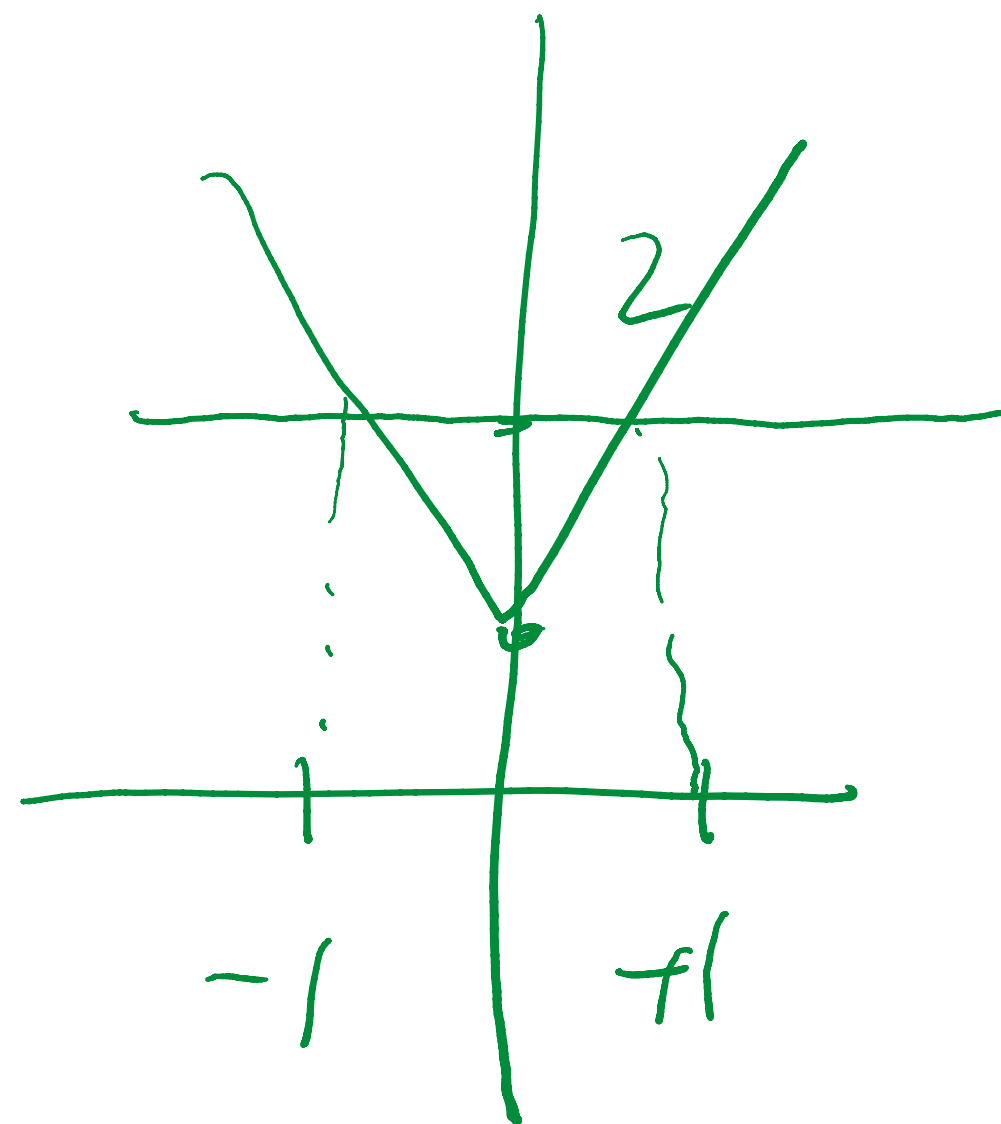
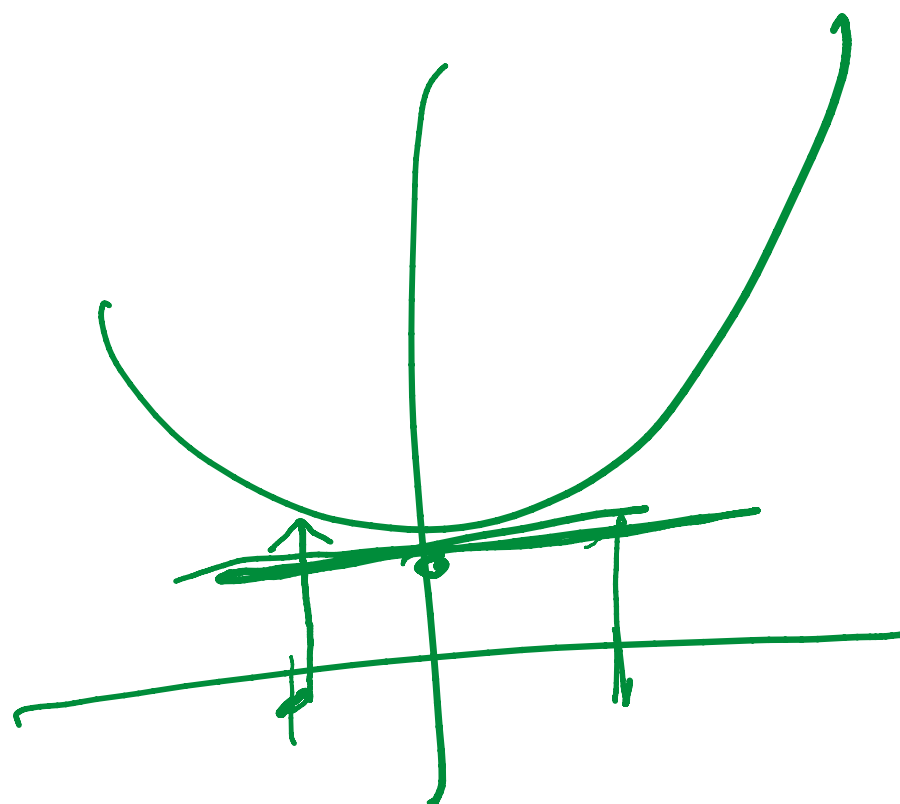
가장 2110로 아 21021

"
은 42 22 2 "

"
은 42 22 3 "

1.16

2.3.2.2.

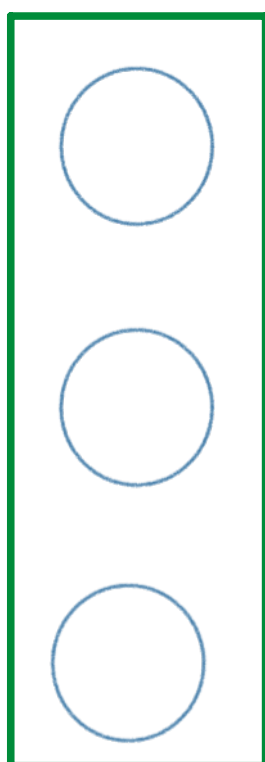


1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100.

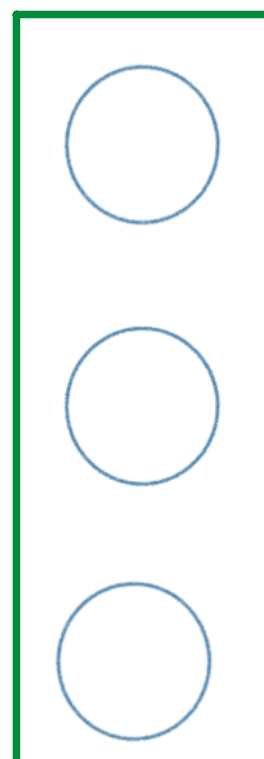
11

X w d

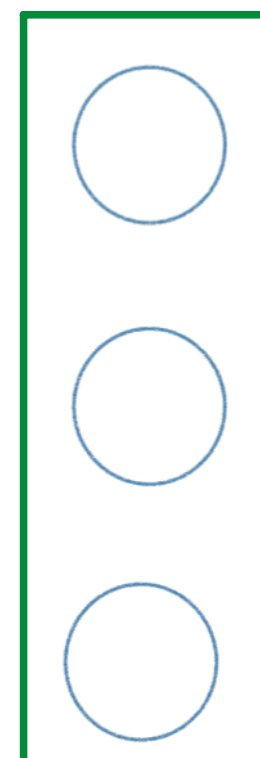
입력층



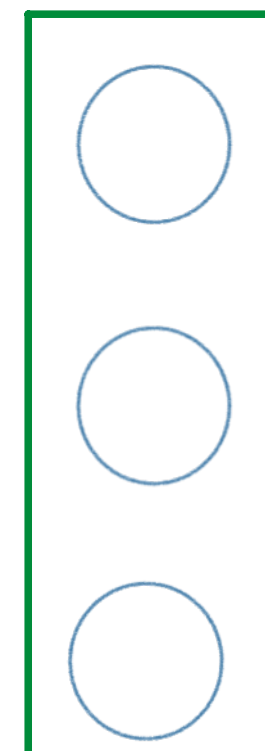
은닉층



출력층



입력층



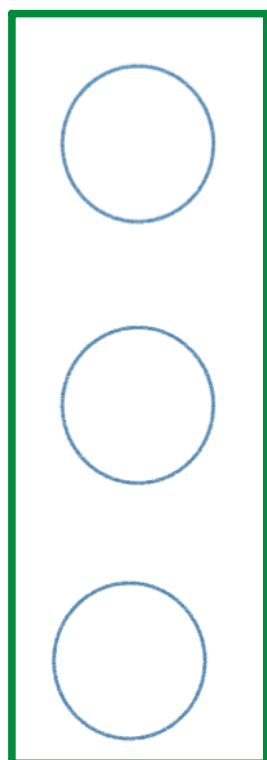
den =

$$\begin{pmatrix} 0.42 \\ 0.62 \end{pmatrix},$$

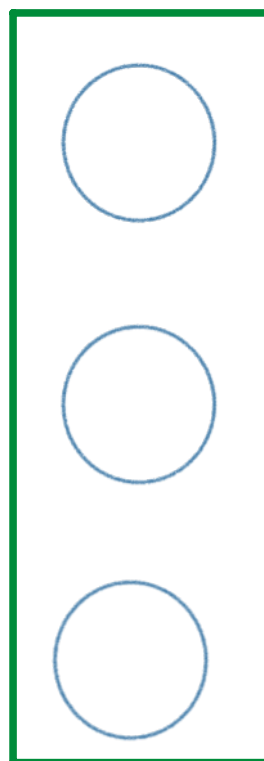
0 hsdde

문장 시작하기 전에. $\frac{1}{2}$ 정도, $\frac{1}{2}$ 정도, $\frac{1}{2}$ 정도, $\frac{1}{2}$ 정도

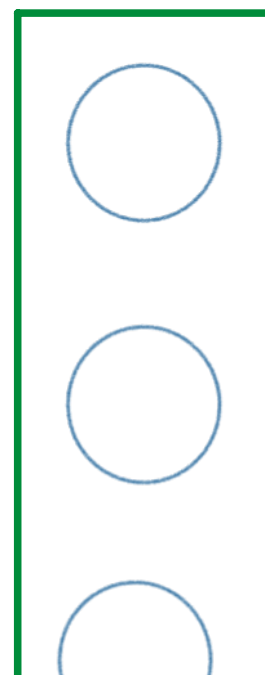
은닉계층



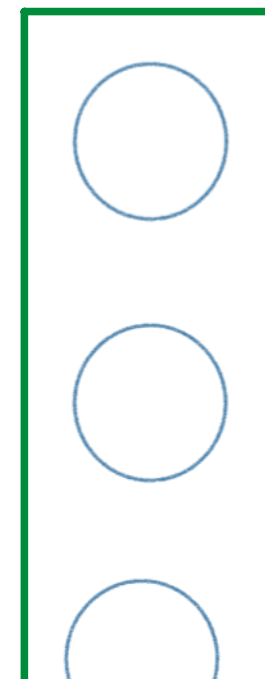
출력계층



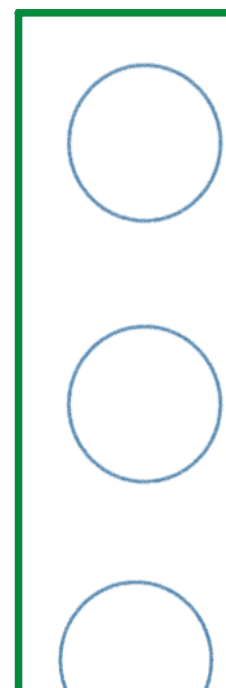
입력계층



은닉계층



출력계층



$$z = \text{sigmoid}(X_{\text{hidden}})$$

$$z = \begin{pmatrix} 0.761 \\ 0.603 \\ 0.650 \end{pmatrix}$$



