

Deep Cross Network(DCN)

导师：Merlin

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1. DeepCross的基础结构

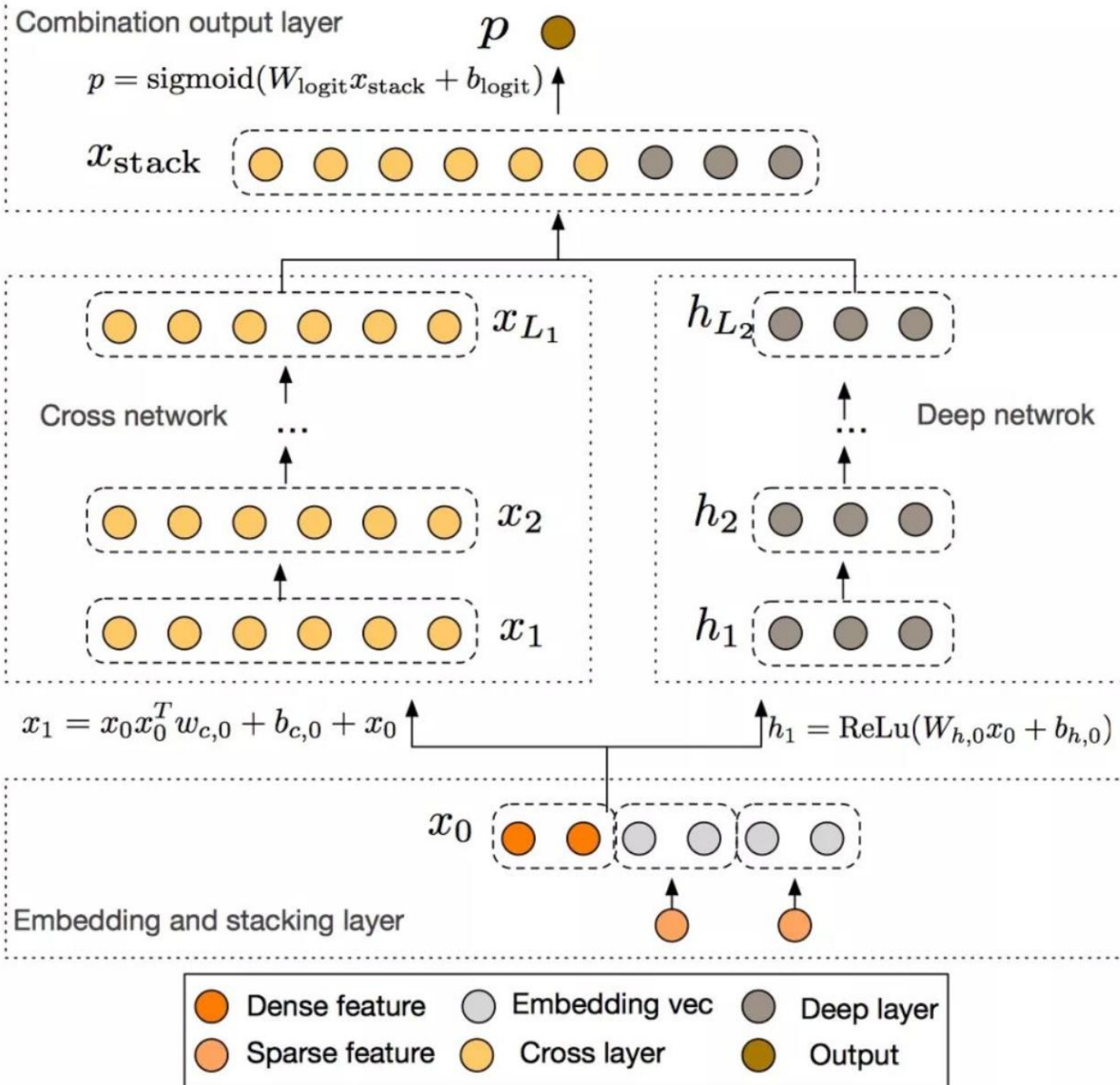
Deep Cross infrastructure

结构

structure

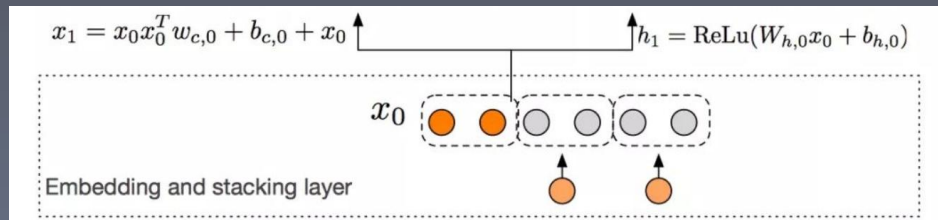


深度之眼
deepshare.net

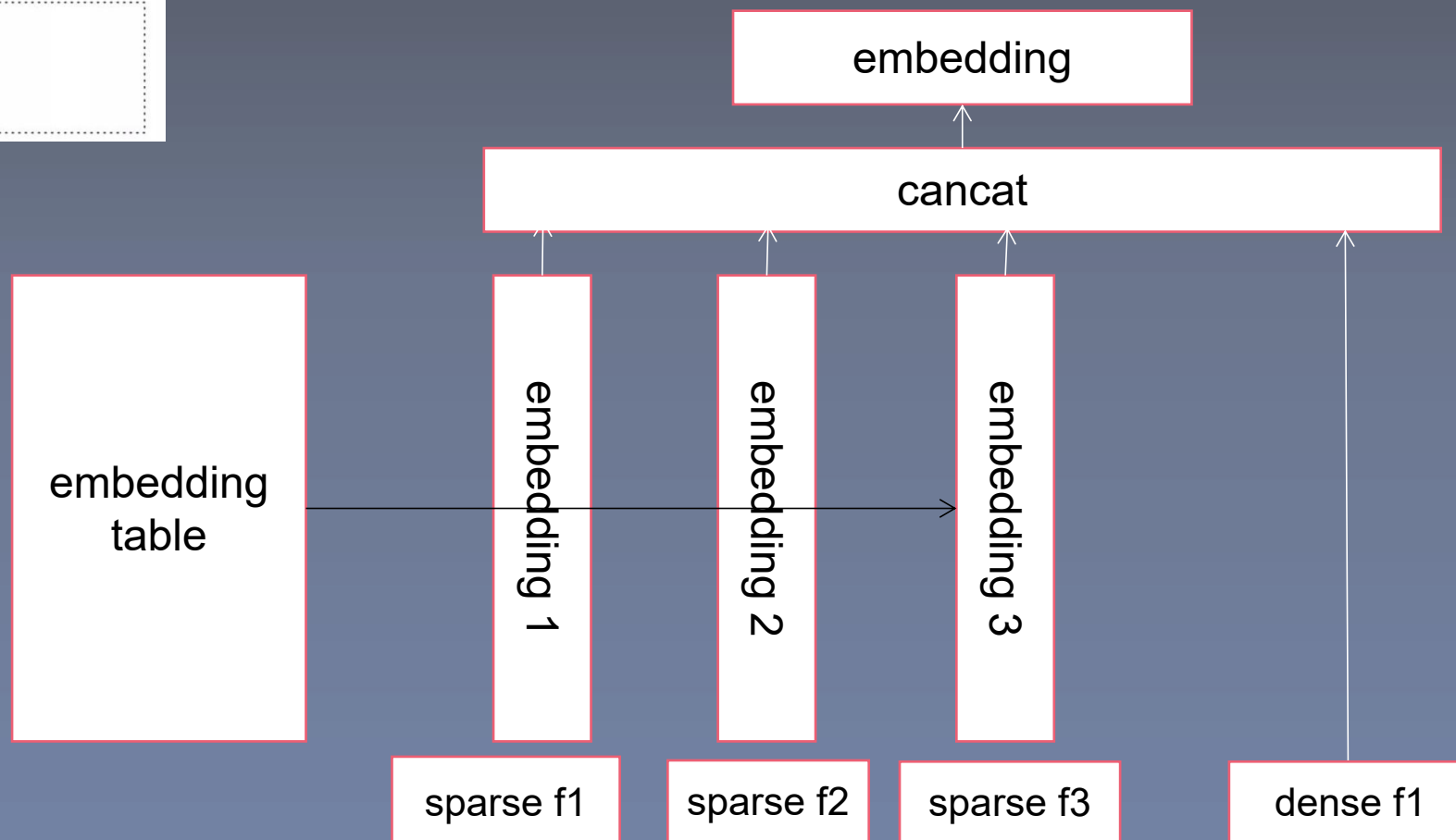


结构-Embedding layer

structure - Embedding layer

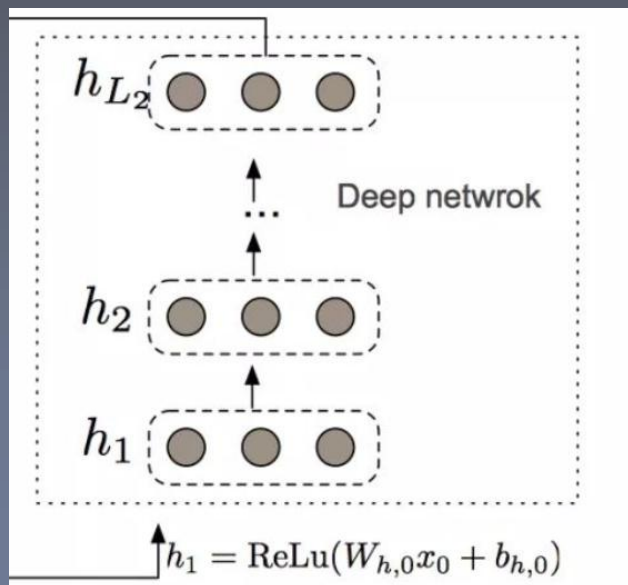


structure - Embedding layer

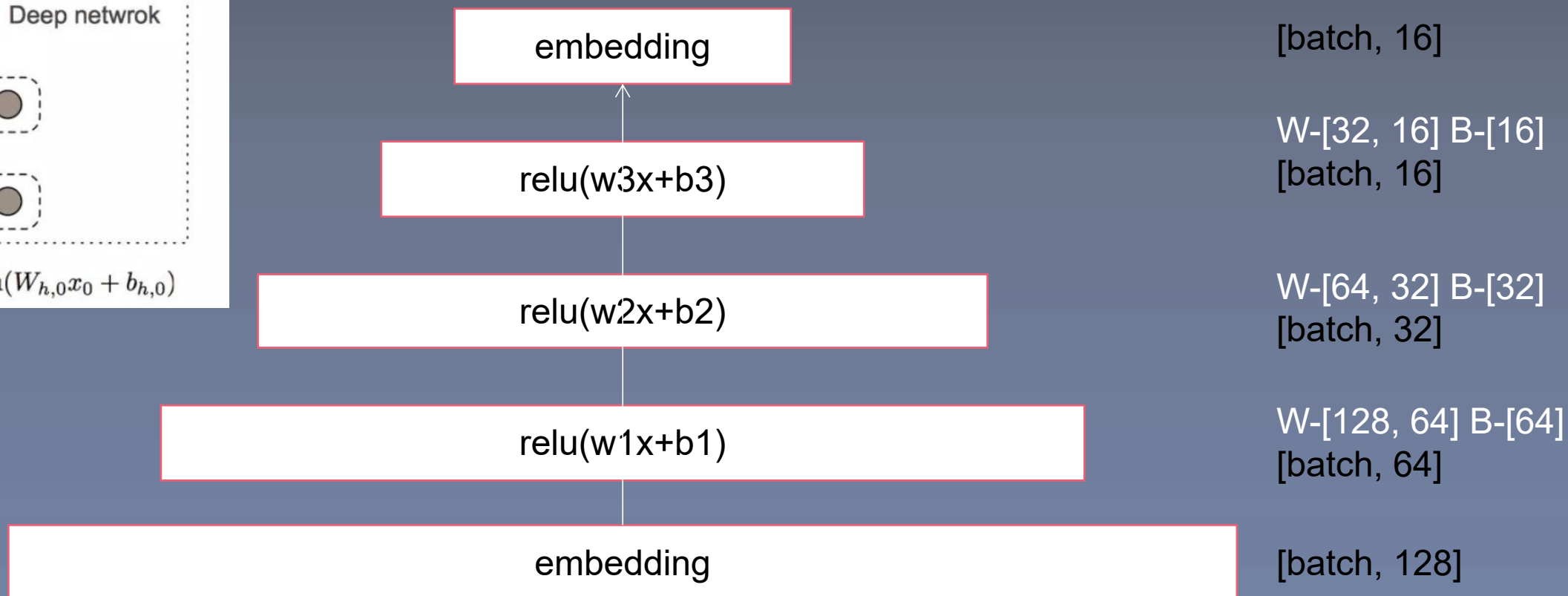


结构-Deep Network

structure - deep network



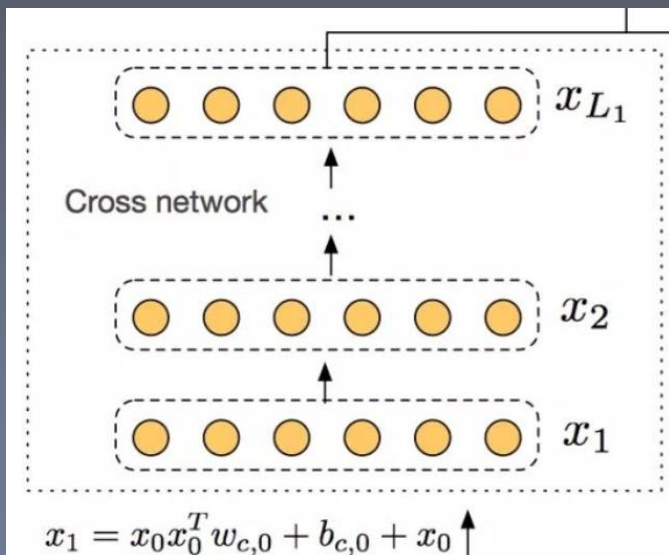
structure - deep network



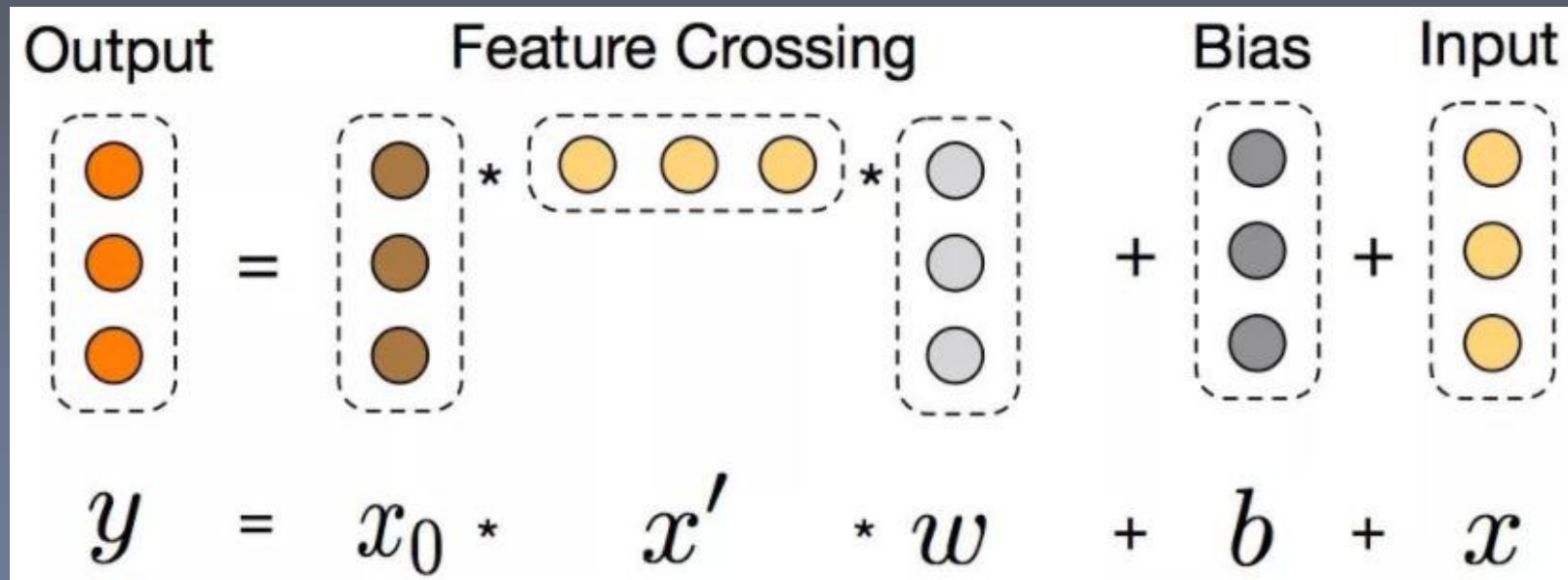
结构-Cross Network

structure - cross network

structure - cross network



$$\mathbf{x}_{l+1} = \mathbf{x}_0 \mathbf{x}_l^T \mathbf{w}_l + \mathbf{b}_l + \mathbf{x}_l = f(\mathbf{x}_l, \mathbf{w}_l, \mathbf{b}_l) + \mathbf{x}_l$$

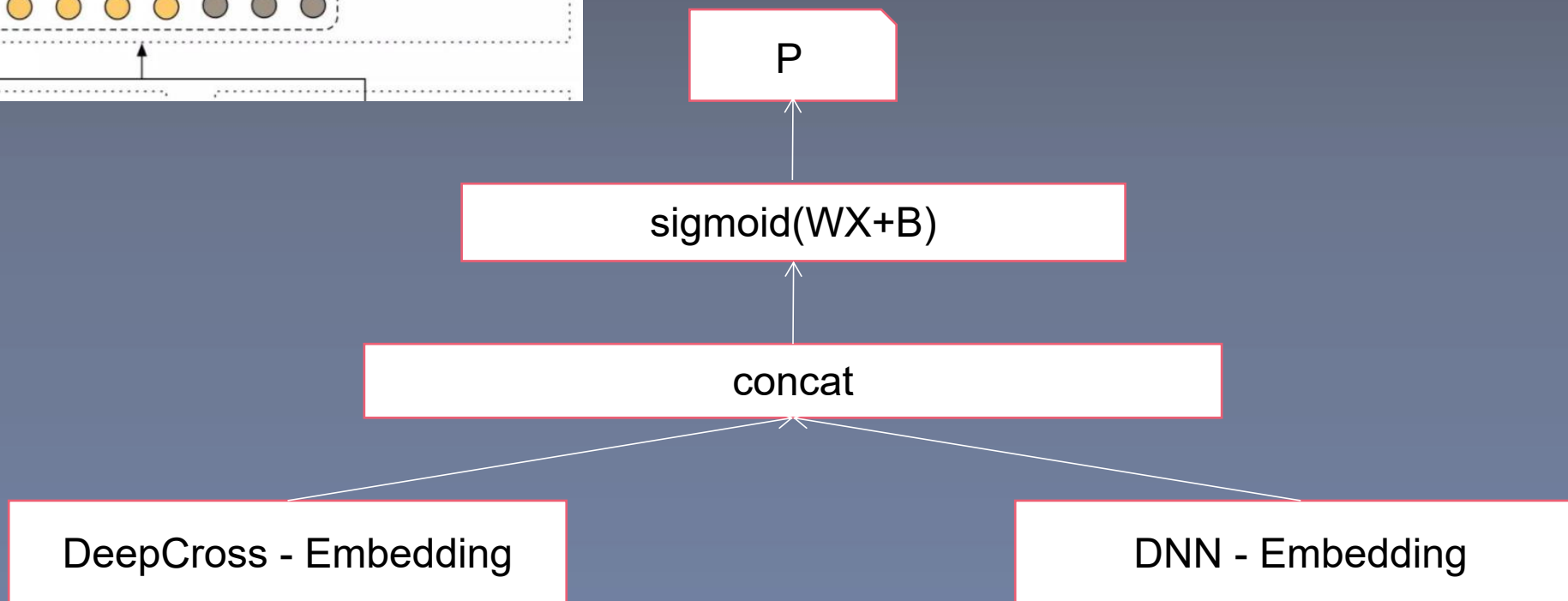
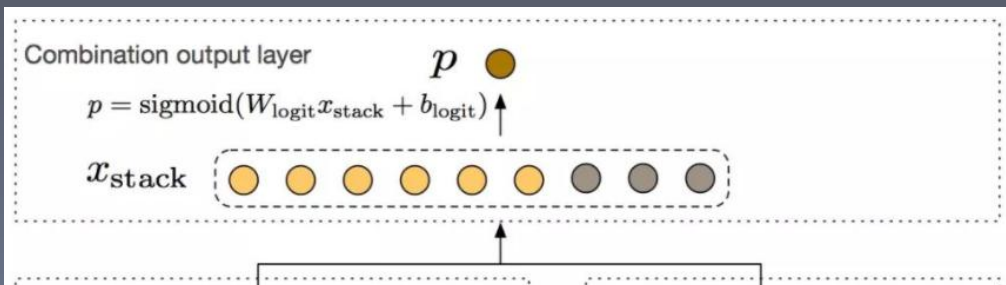


x_1, x_2, x_3

$x_1 * x_1, x_1 * x_2, x_1 * x_3, x_2 * x_1, x_2 * x_2, x_2 * x_3, x_3 * x_1, x_3 * x_2, x_3 * x_3, x_1, x_2, x_3, B$

常用双塔模型

Common double tower model



2.DeepCross的注意事项

Deep Cross infrastructure

注意事项

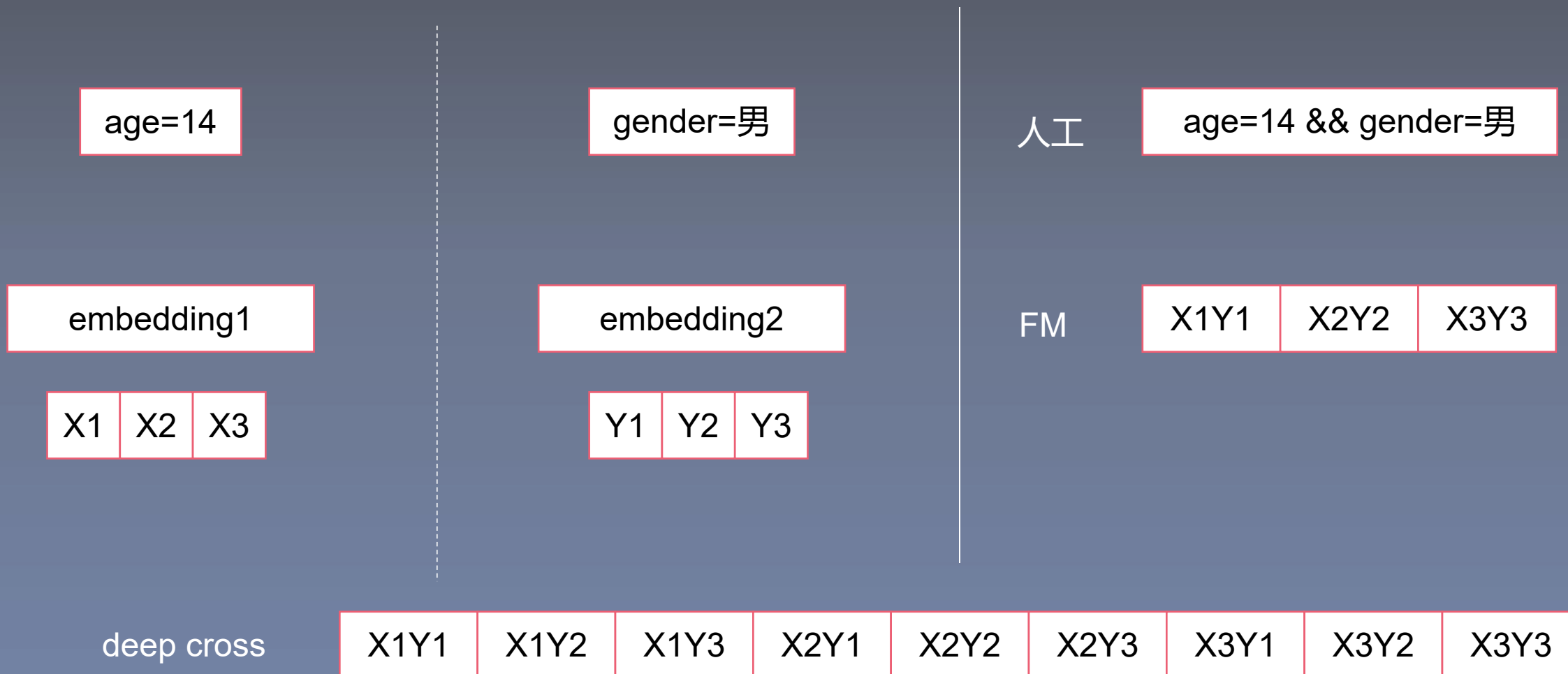
Note

□ cross层交叉的特征是什么？

□ 参数量为何减少很多？

1. cross层交叉的特征是什么？

What are the characteristics of cross layer intersection?



2. 参数量为何减少很多

Why the number of parameters is reduced so much

deep cross

X1Y1	X1Y2	X1Y3	X2Y1	X2Y2	X2Y3	X3Y1	X3Y2	X3Y3
W1	W2	W3	W4	W5	W6	W7	W8	W9

X1Y1	X1Y2	X1Y3	×	W1	=	W1X1Y1+W2X1Y2+W3X1Y3
X2Y1	X2Y2	X2Y3		W2		W1X2Y1+W2X2Y2+W3X2Y3
X3Y1	X3Y2	X3Y3		W3		W1X3Y1+W2X3Y2+W3X3Y3

3.DeepCross的应用场景

deep cross application scenario



应用场景

application scenario

□ 广告、推荐、搜索等排序场景

□ 特征之间存在相关性

4.DCN在广告场景的应用

Application of DCN in advertising scenarios



代码项目实践

code project practice

1 ↓ 数据处理

2 ↓ 模型开发

3 ↓ 运用于排序

总结

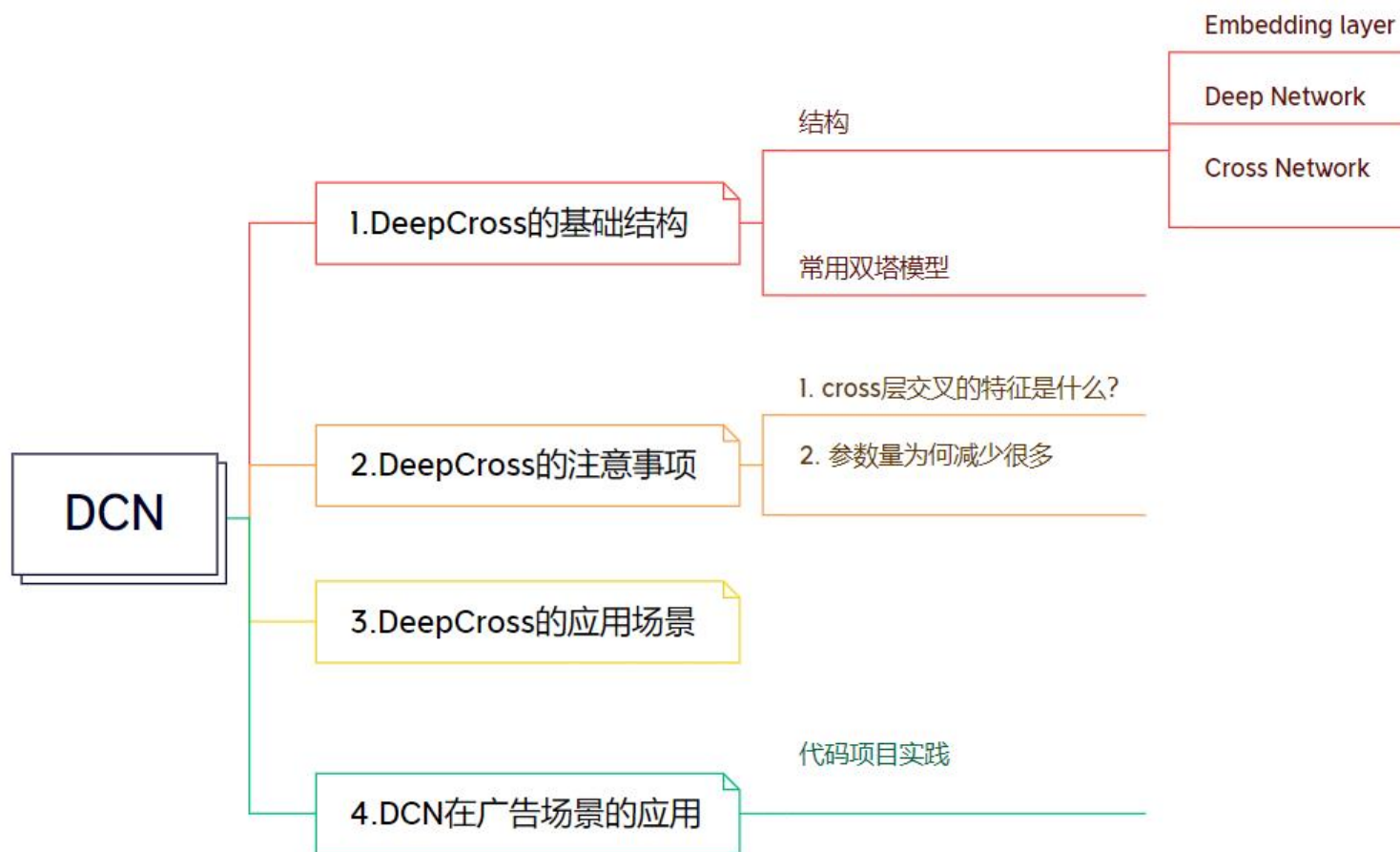
Summary

知识回顾

review



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问答环节

Q&A
