Toward a theory of transfer

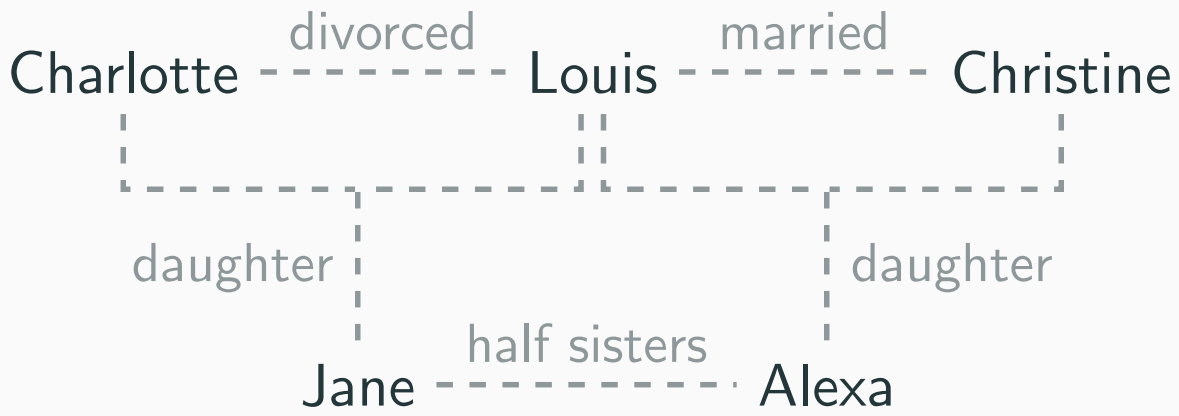
Andrew Lampinen

Lightning Talk, Oct. 4th 2017

Transfer

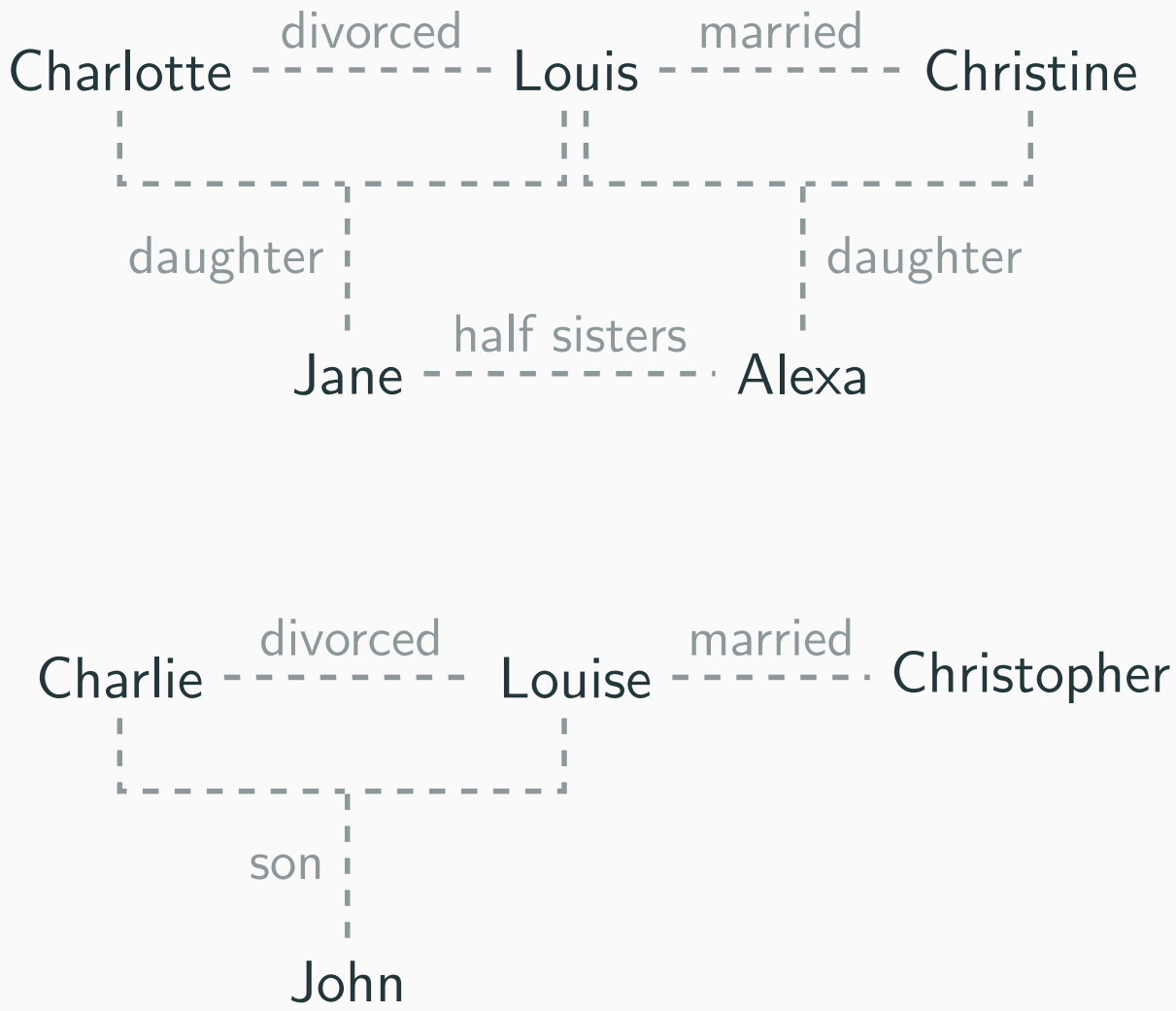
Audience participation!!!

Transfer



[Hinton, 1986]

Transfer



[Hinton, 1986]

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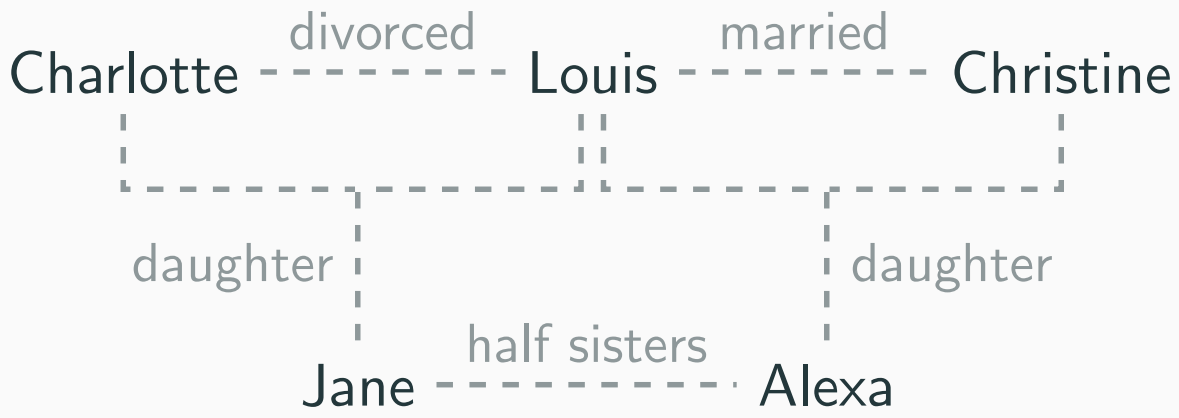

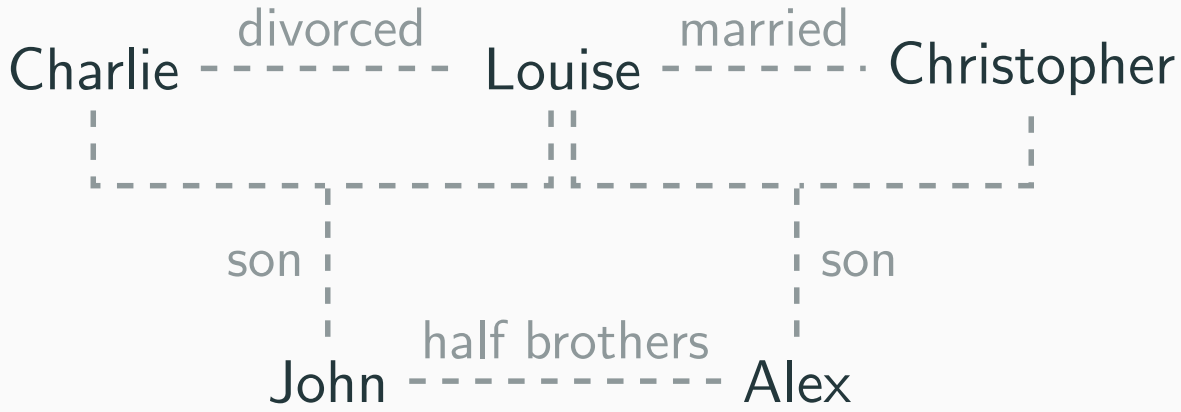

[Hinton, 1986]

The human condition

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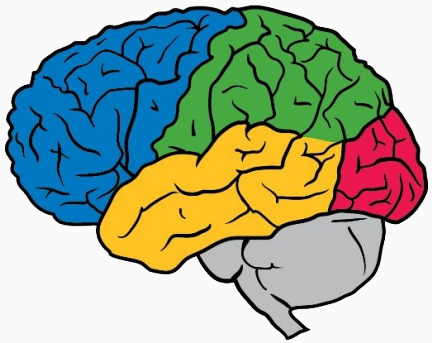
Neural nets transfer too!



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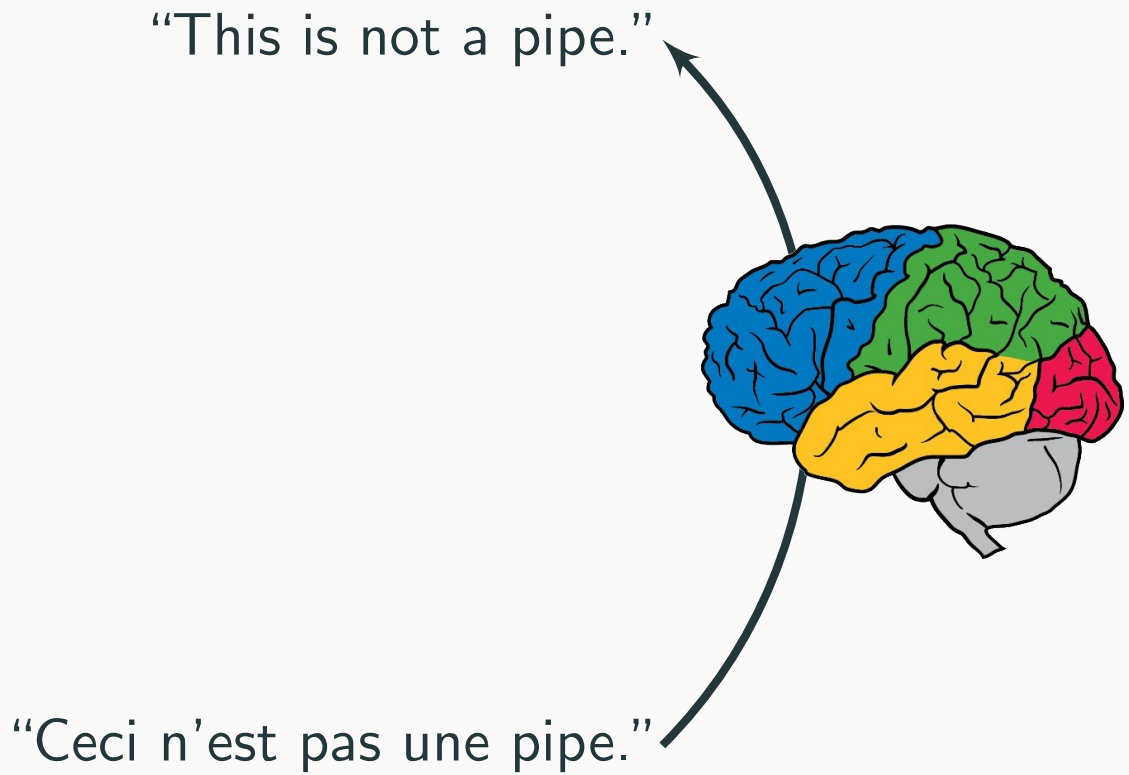

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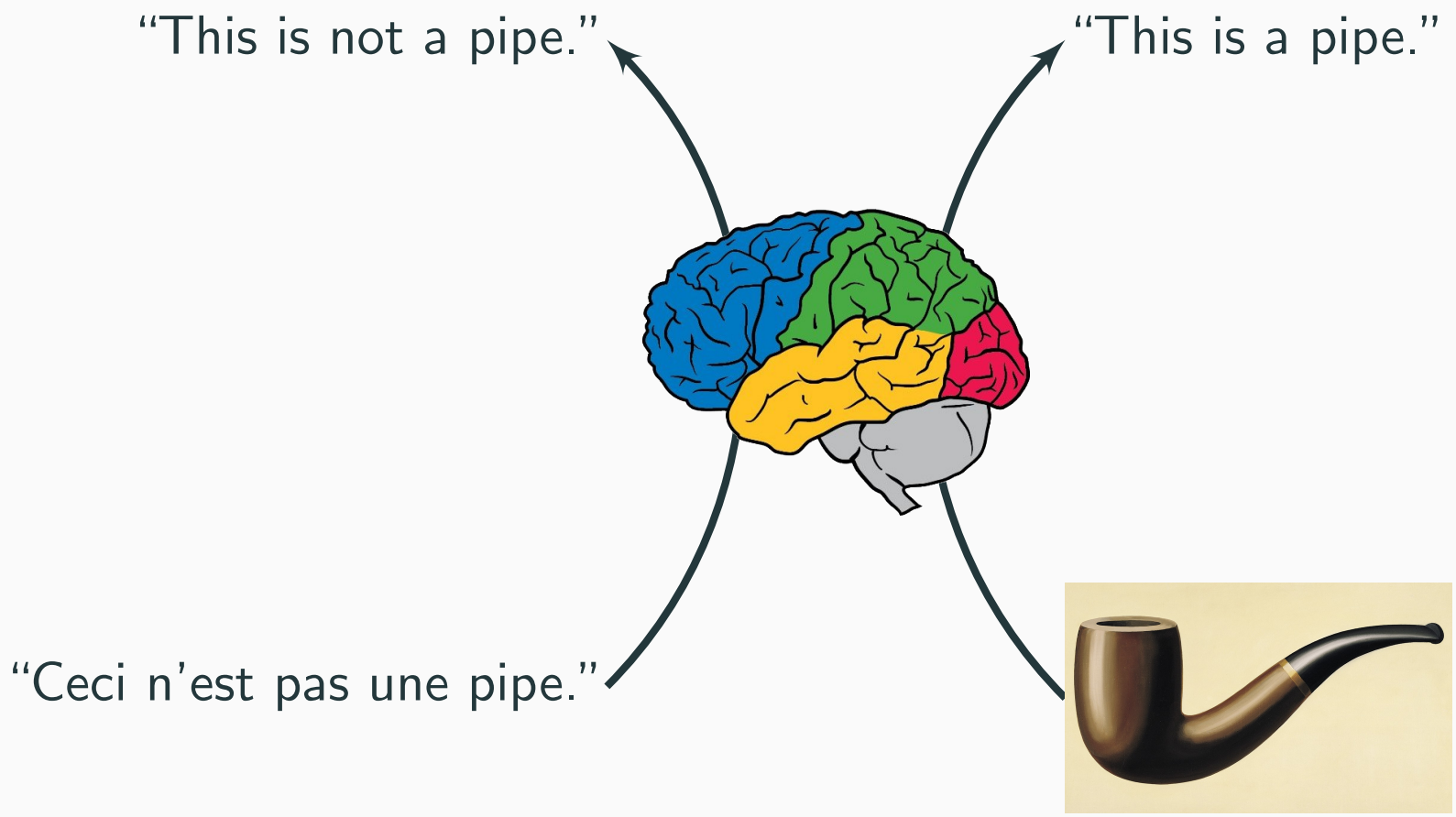
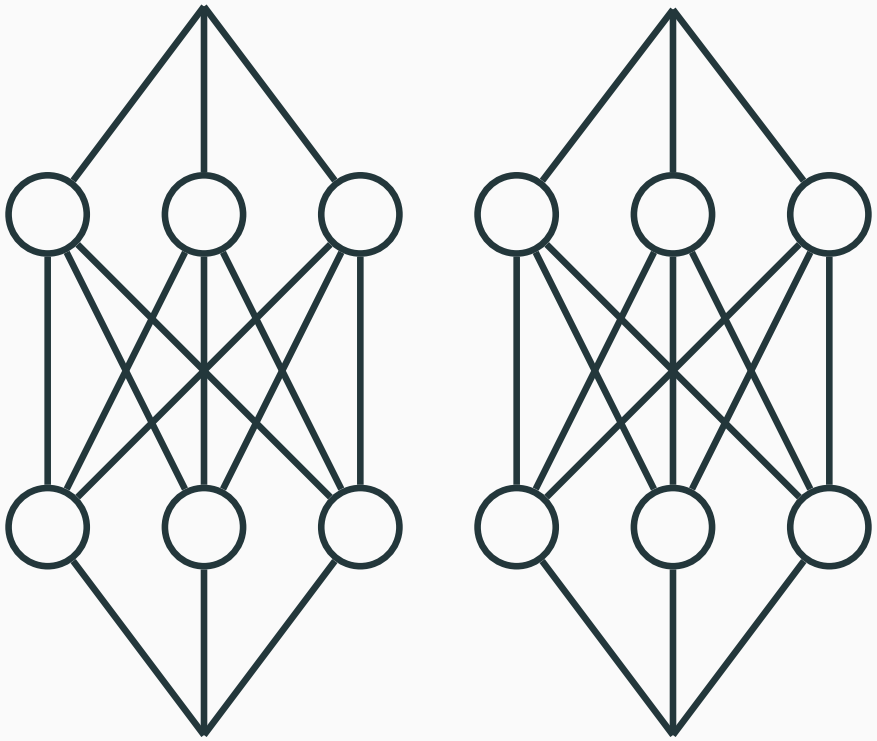


We suggest that these are similar processes.
Can we develop a theory?

Isomorphic tasks for neural networks



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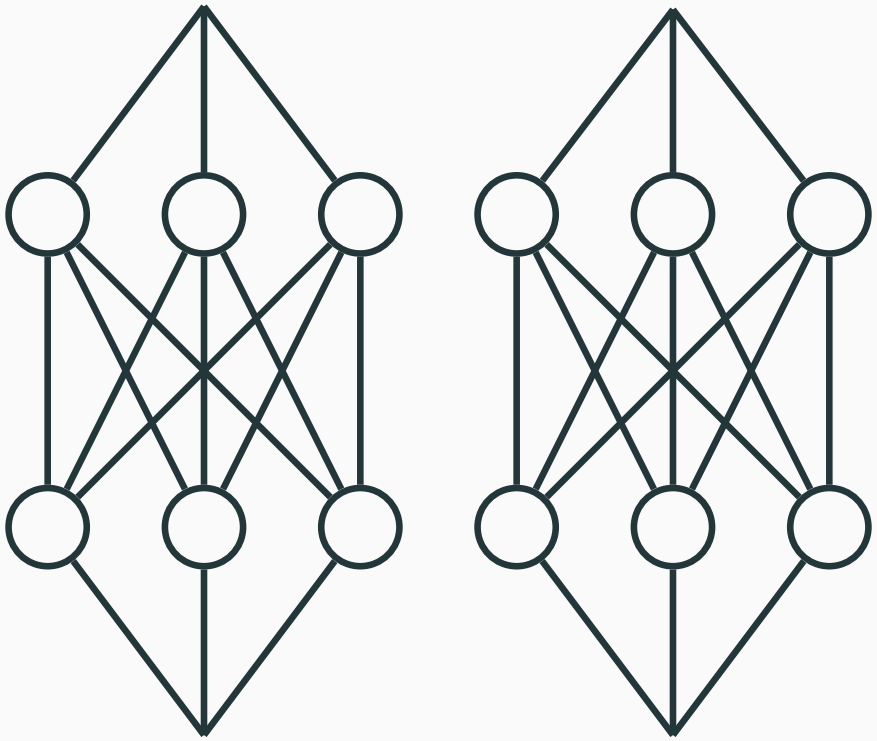

"Who are
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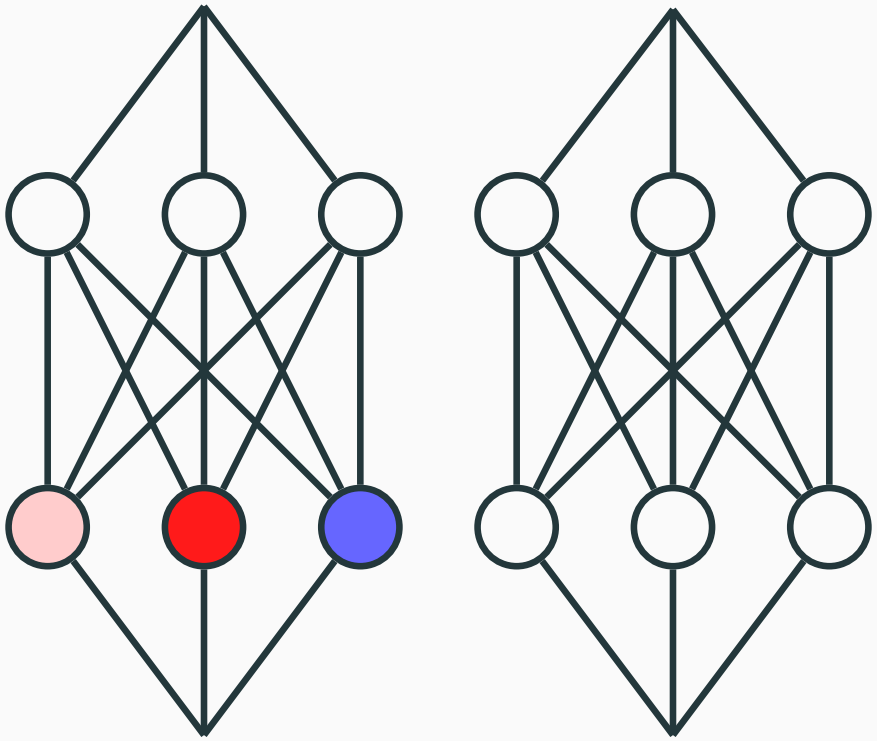

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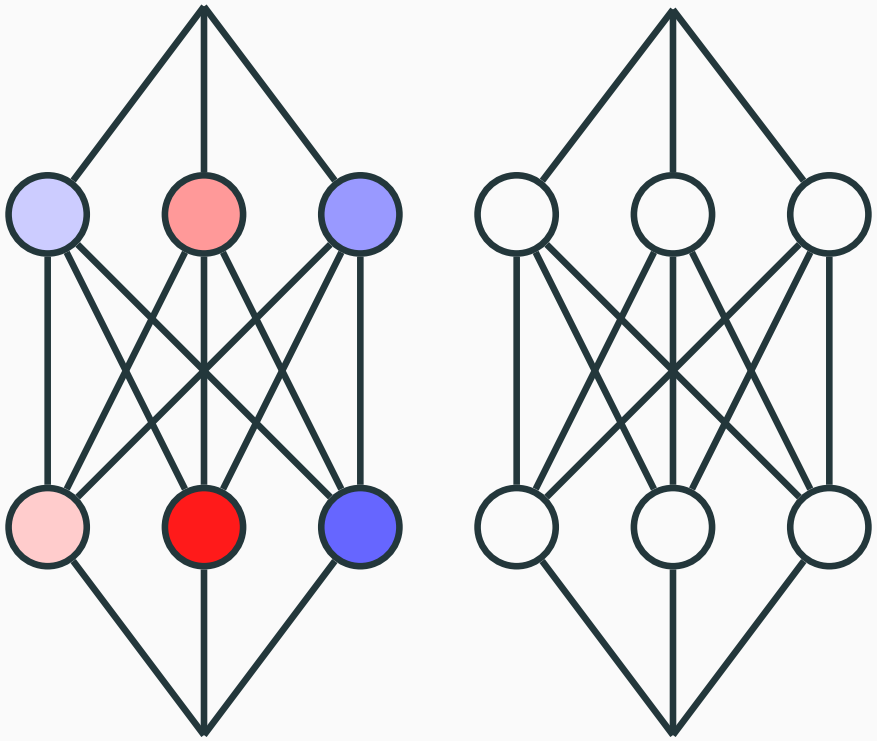

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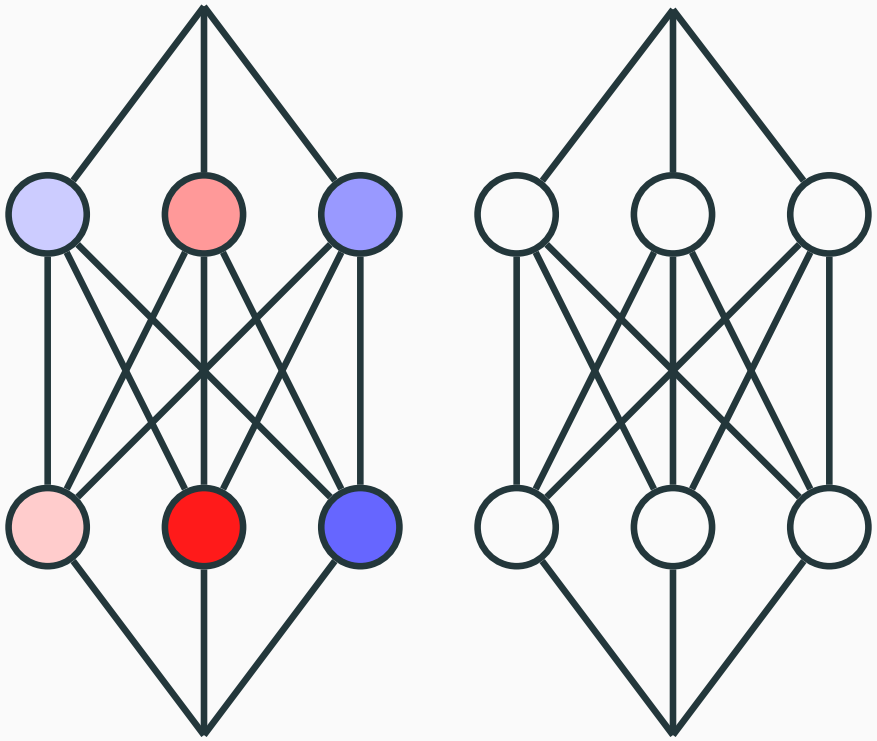

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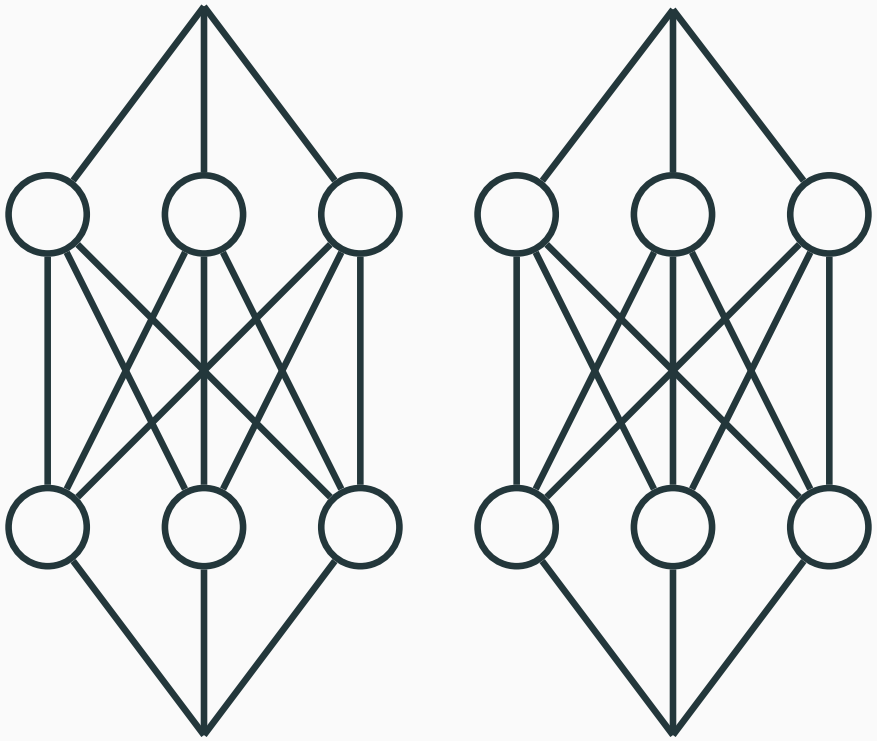

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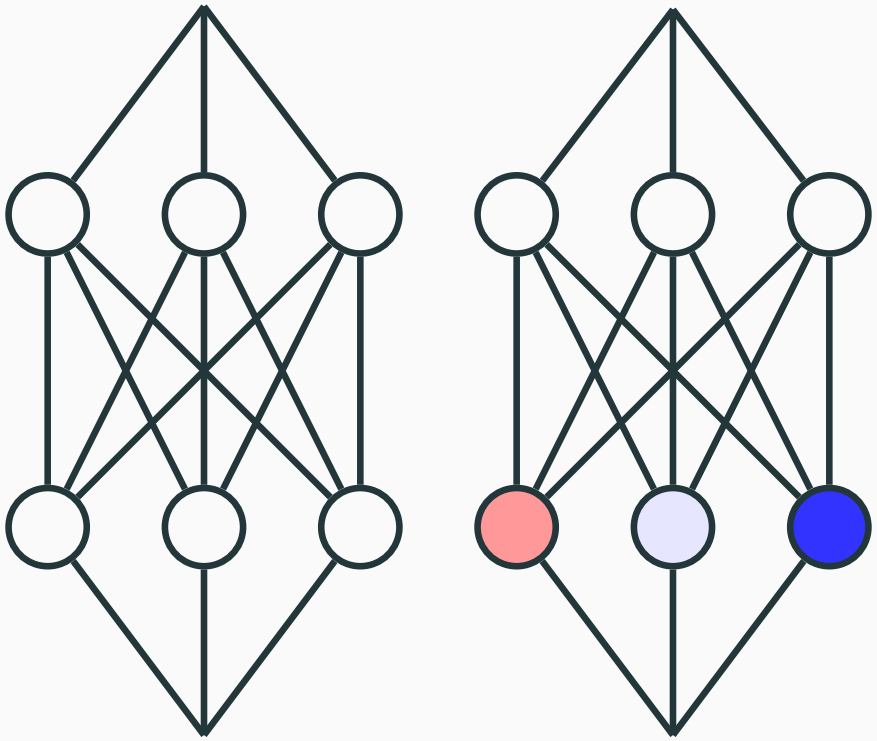

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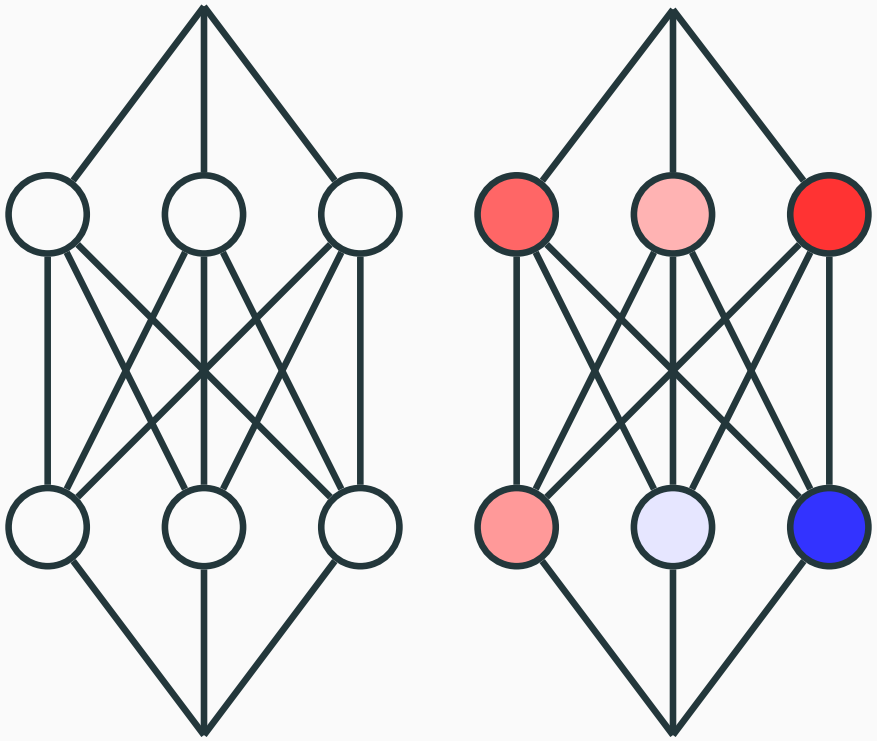

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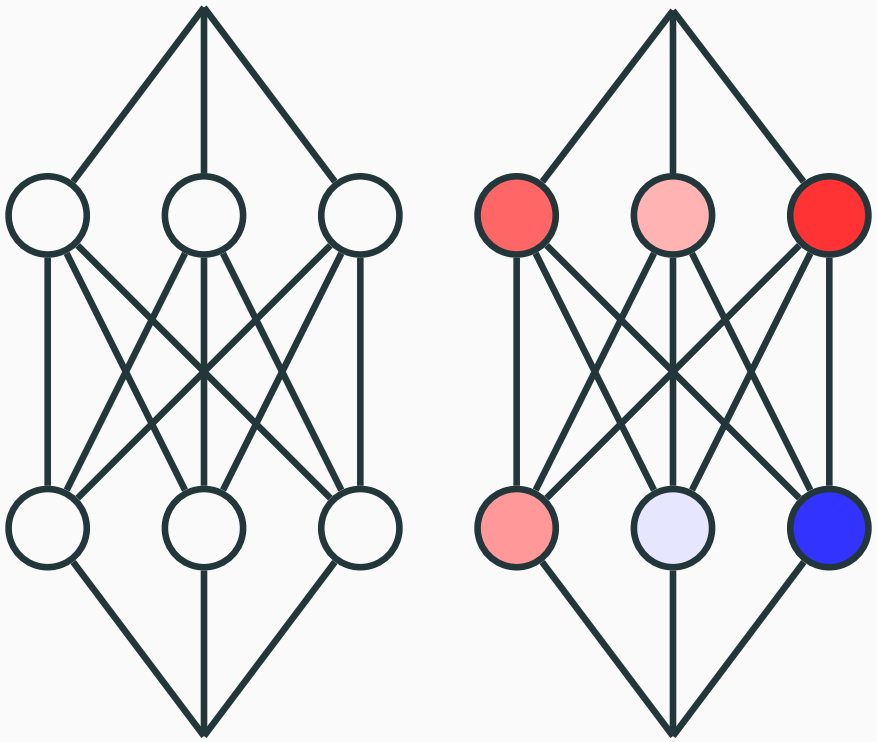

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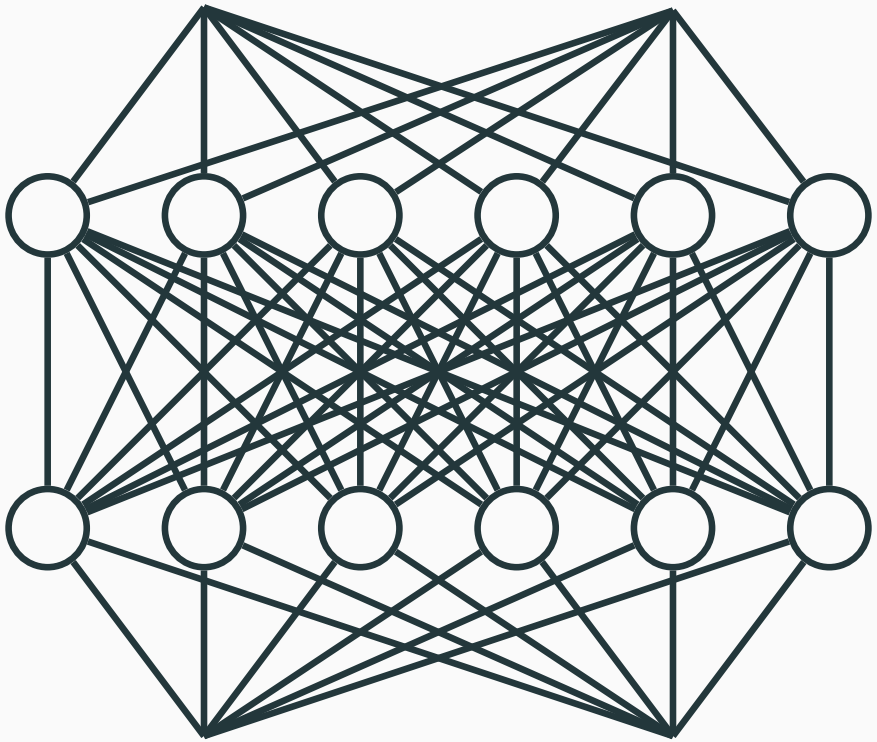

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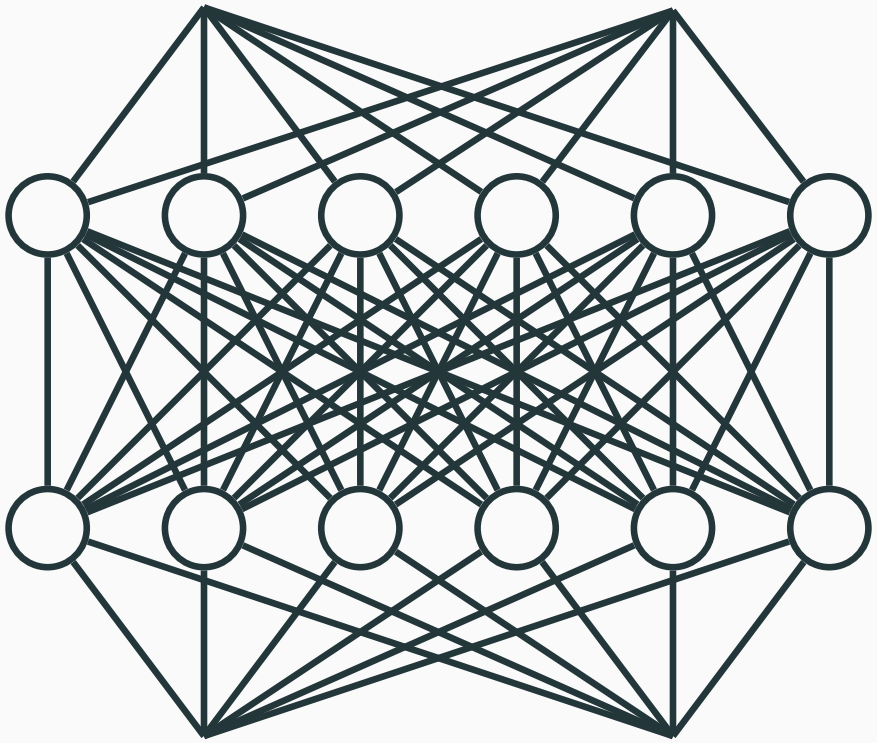

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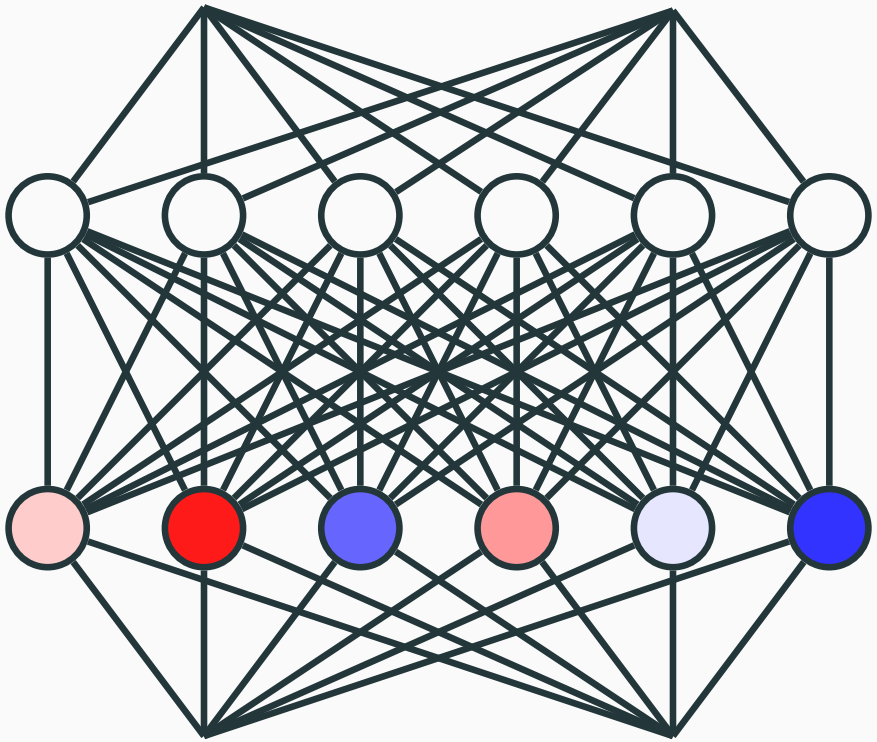

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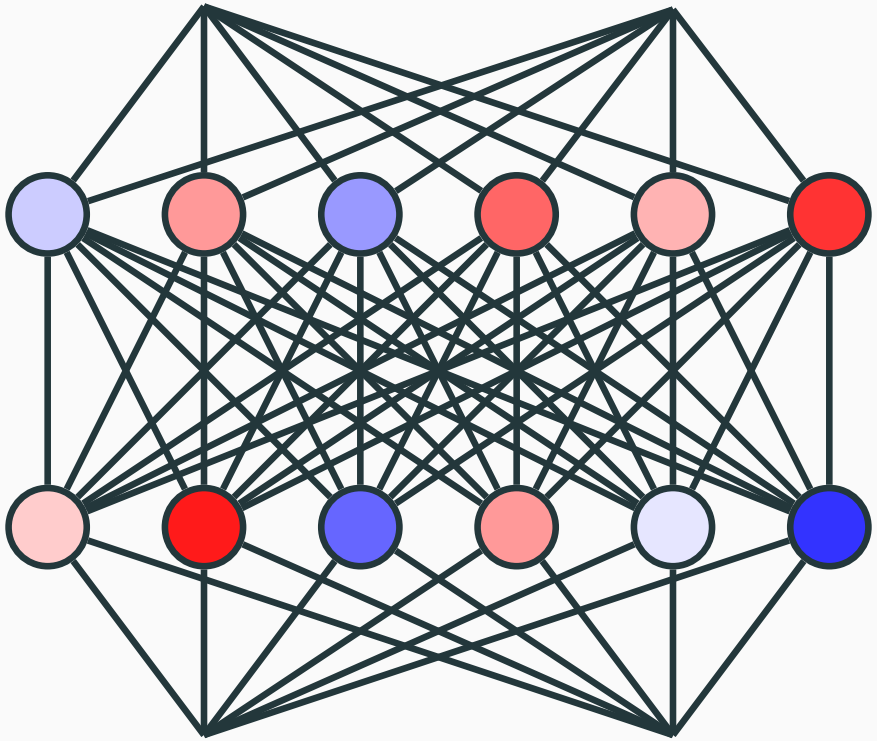

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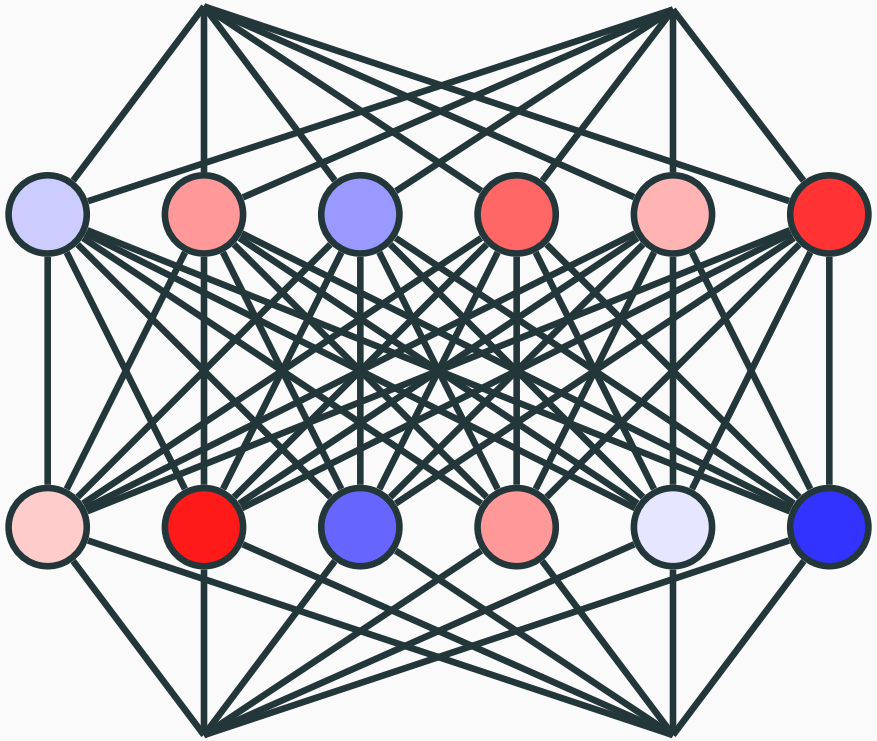

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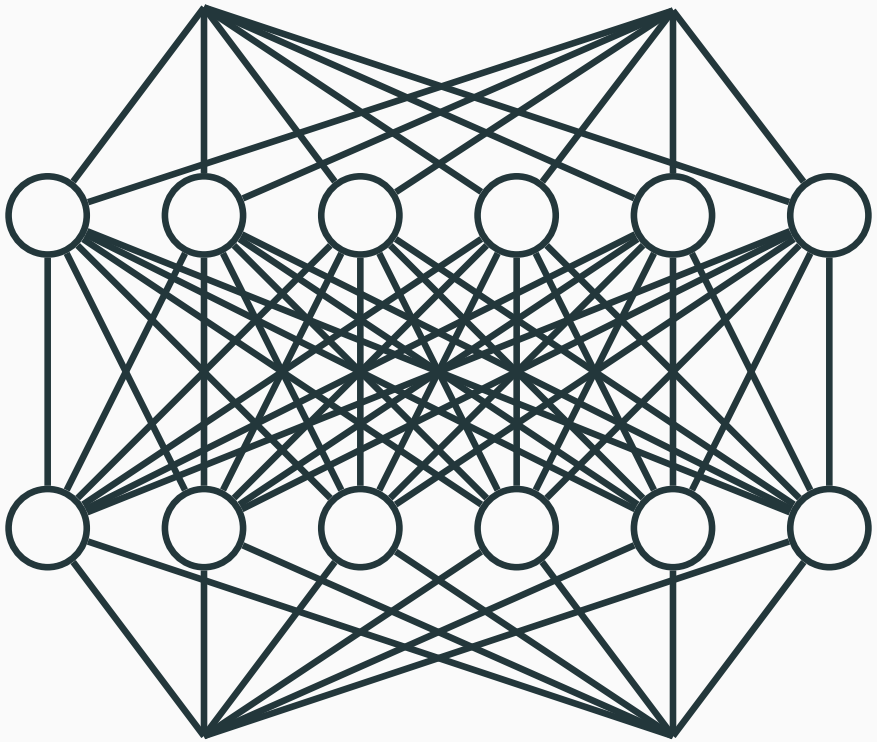

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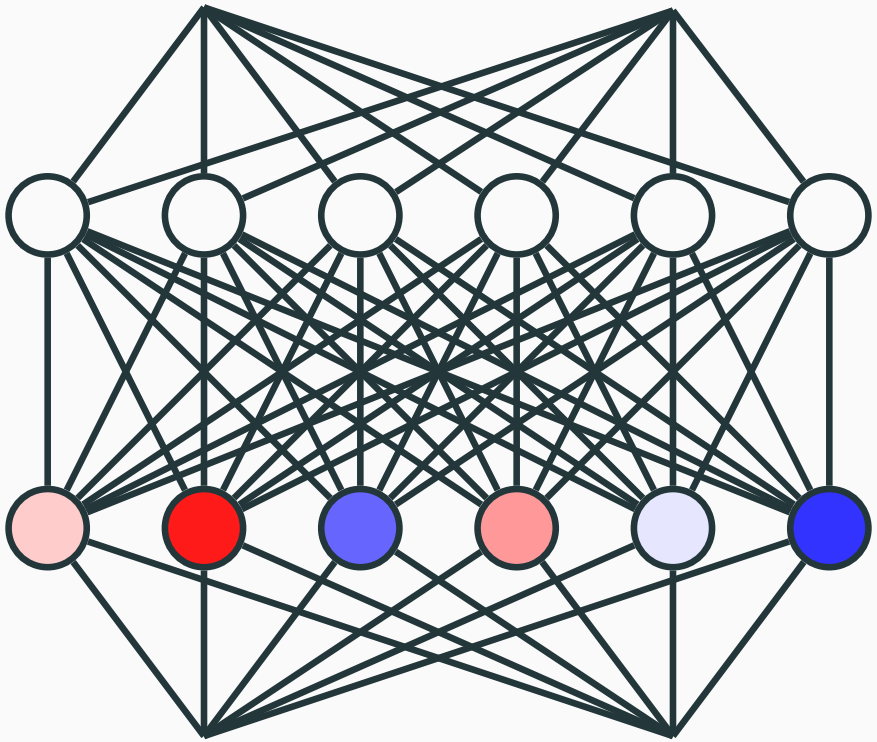

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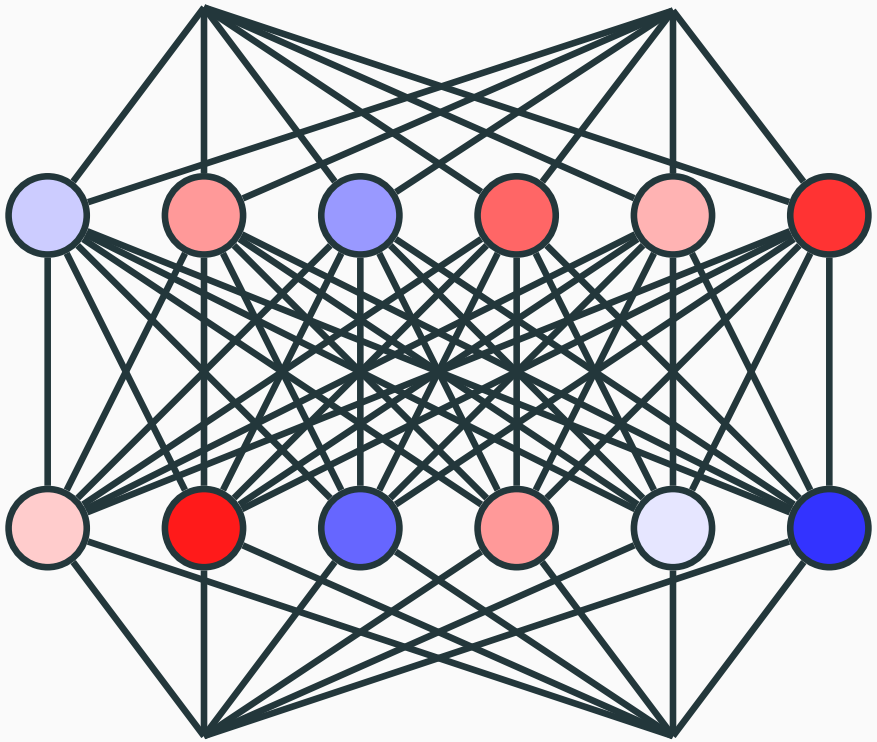

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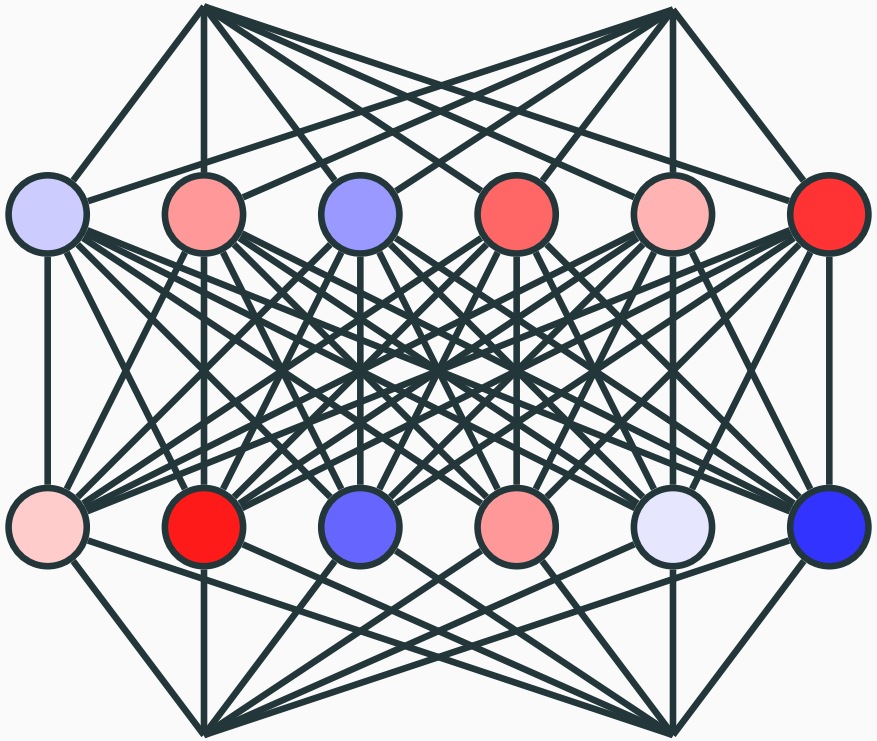

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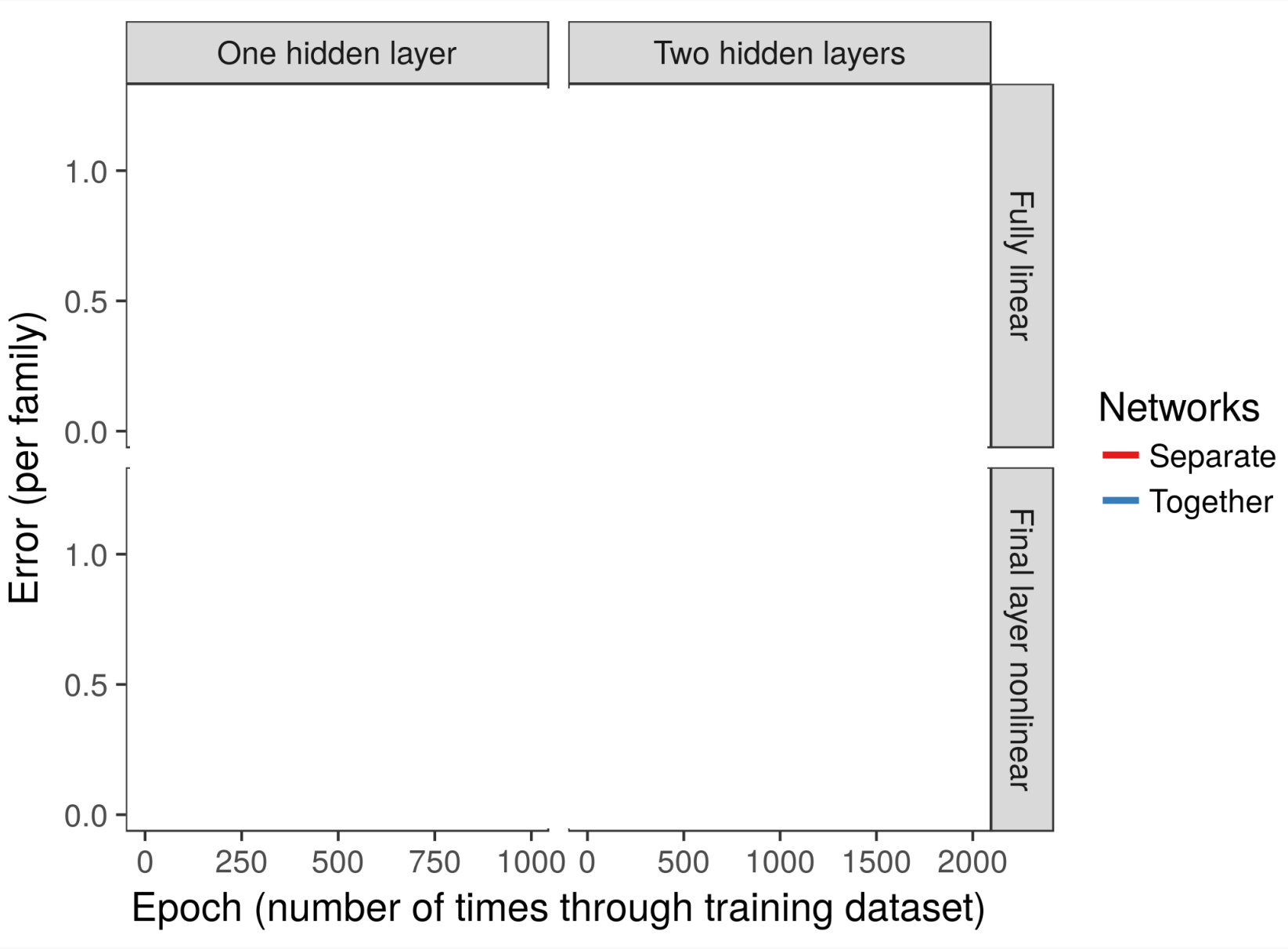
Under what conditions?



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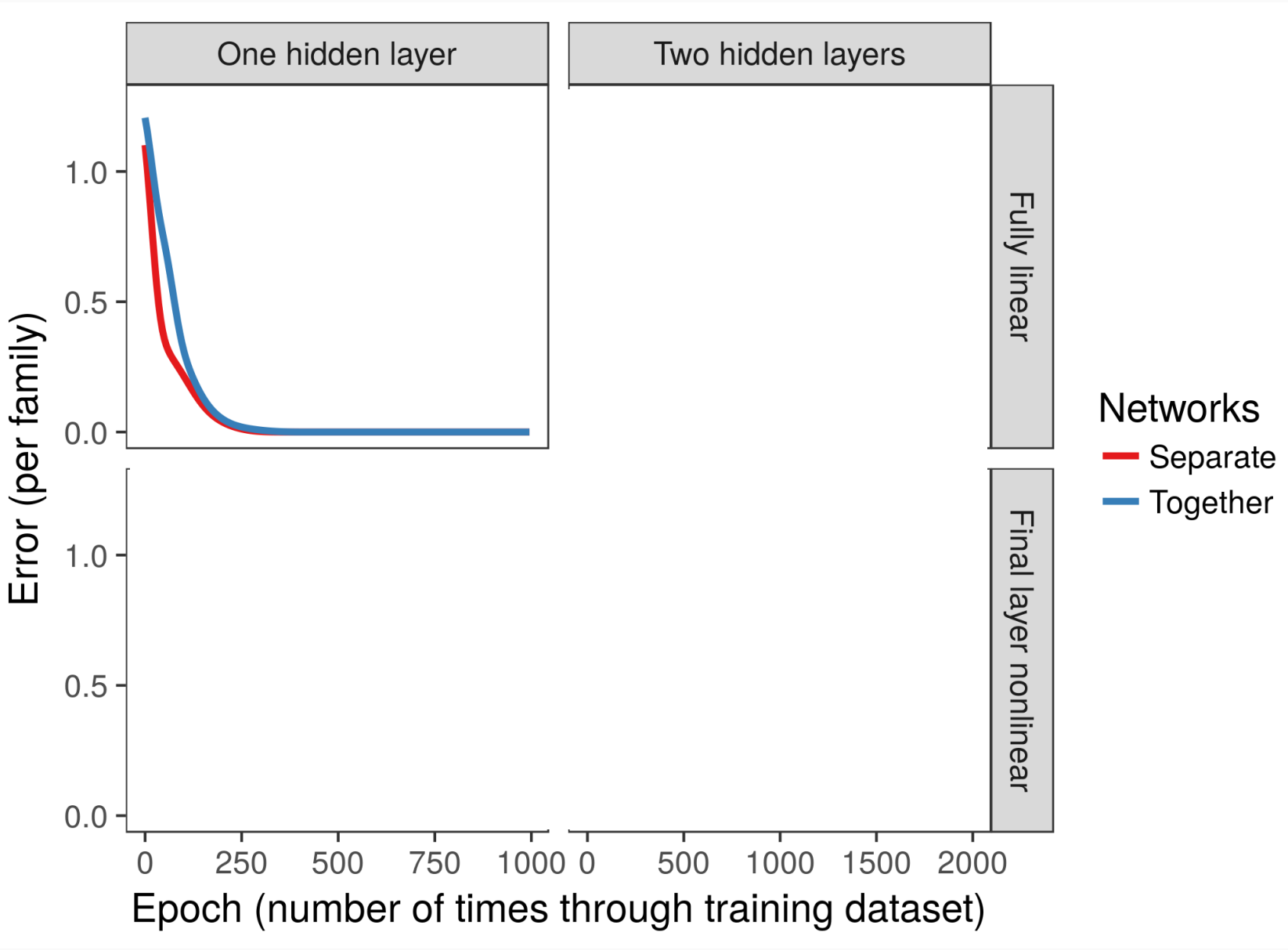

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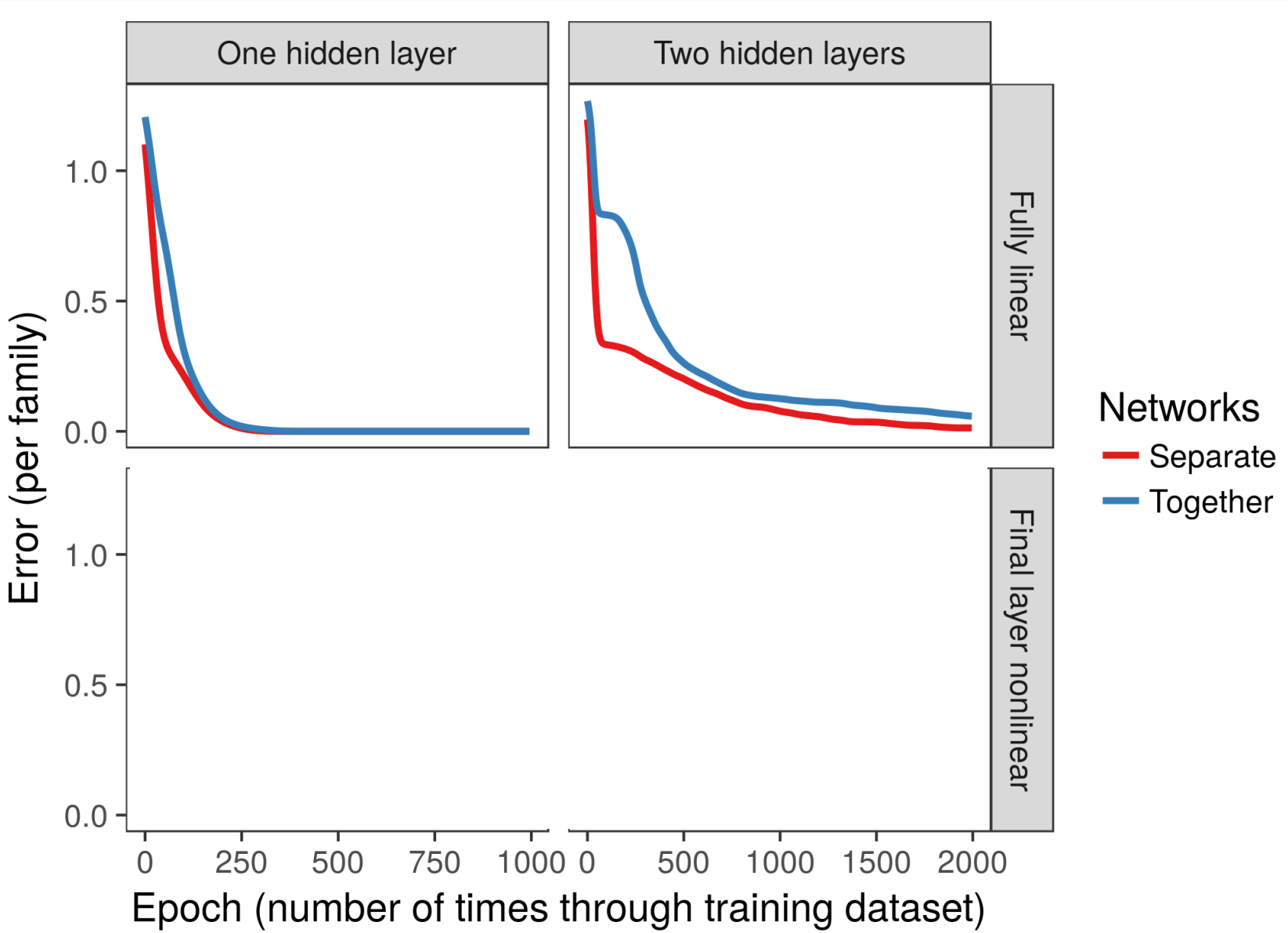

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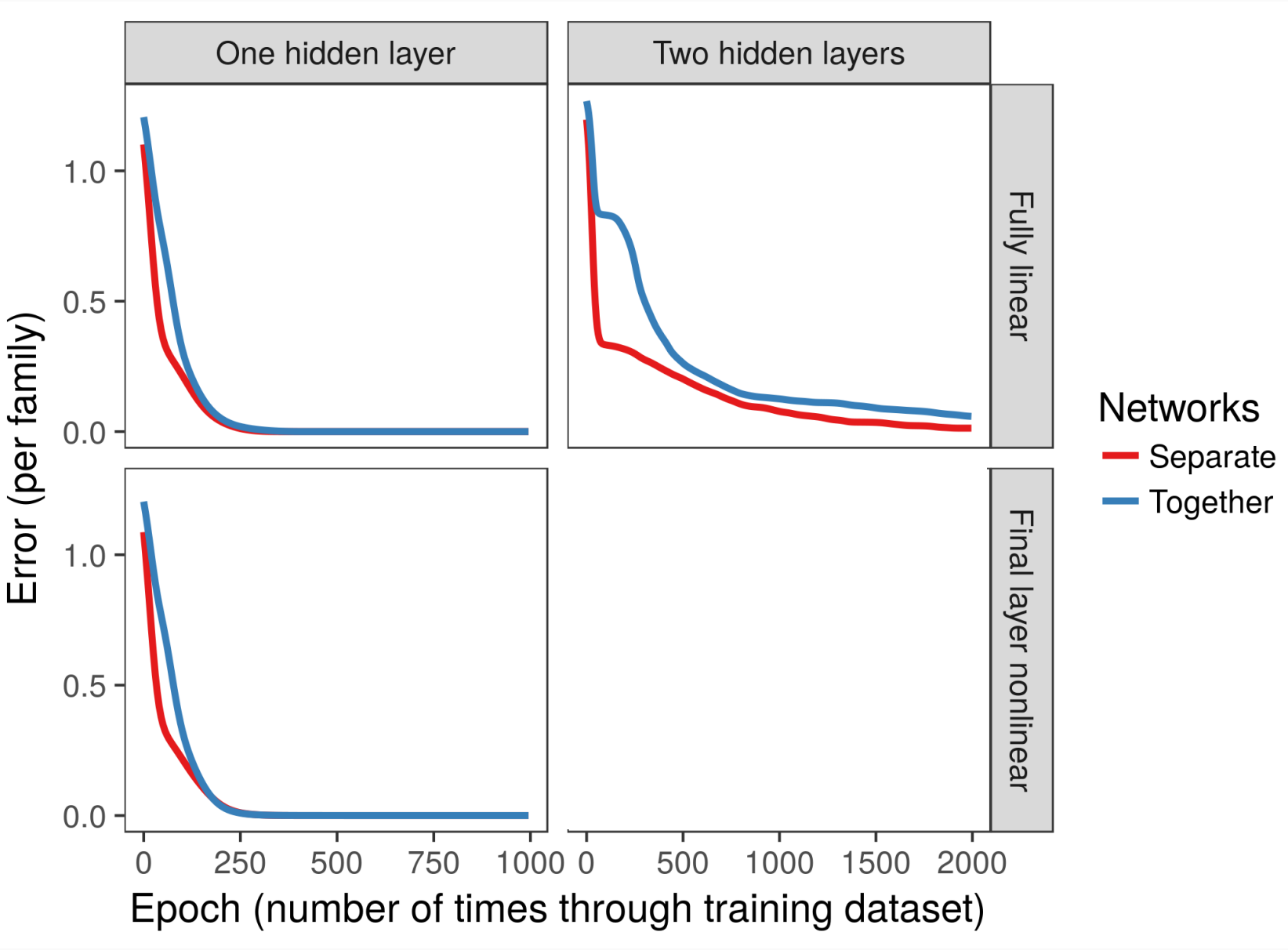

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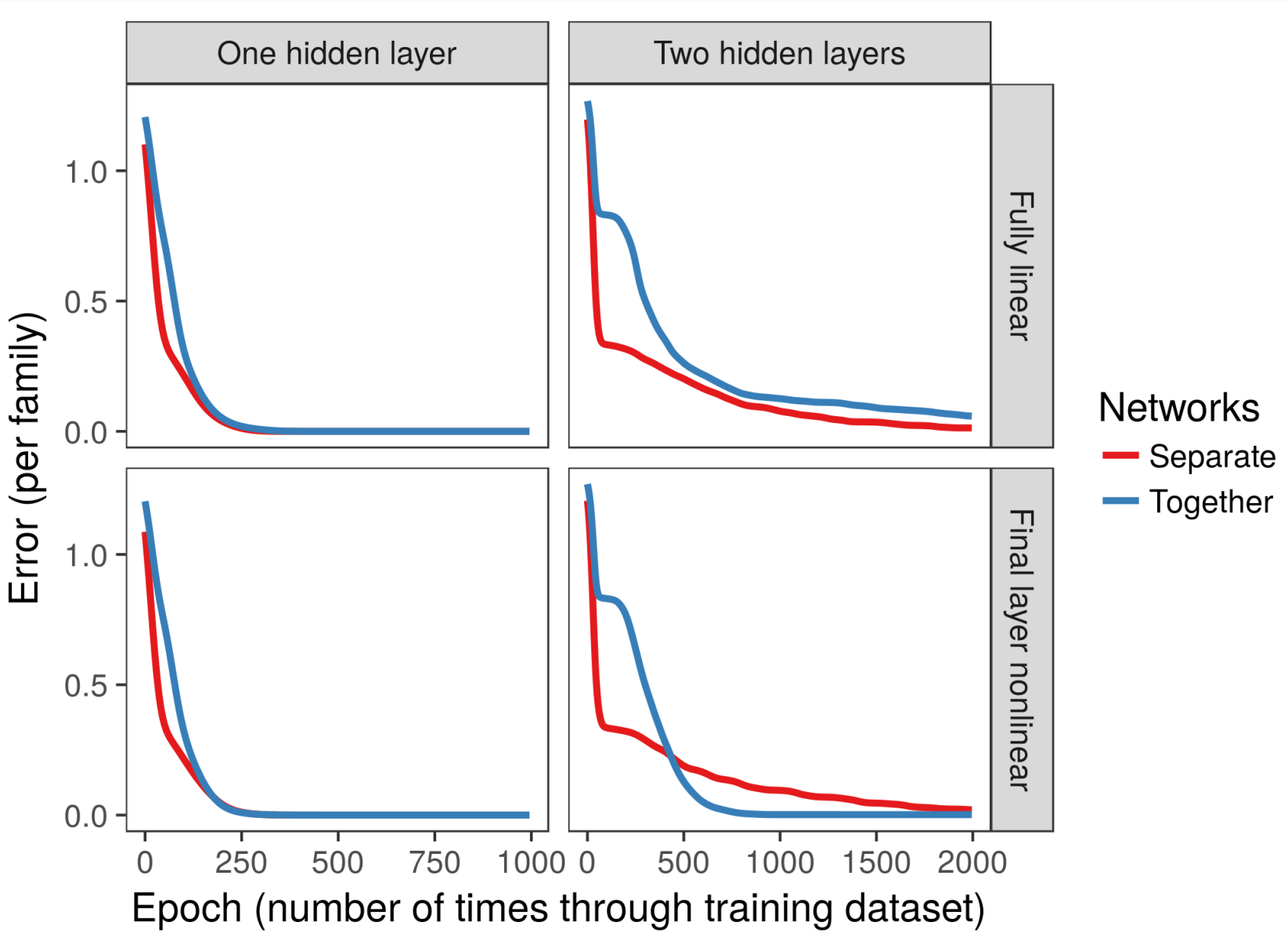

Questions?

References

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Geoffrey Hinton. Learning distributed representations of concepts, 1986. ISSN 10414347.

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Minh-Thang Luong, Quoc V. Le, Ilya Sutskever, Oriol Vinyals, and Lukasz Kaiser. Multi-task Sequence to Sequence Learning. *Iclr*, pages 1–9, 2016.