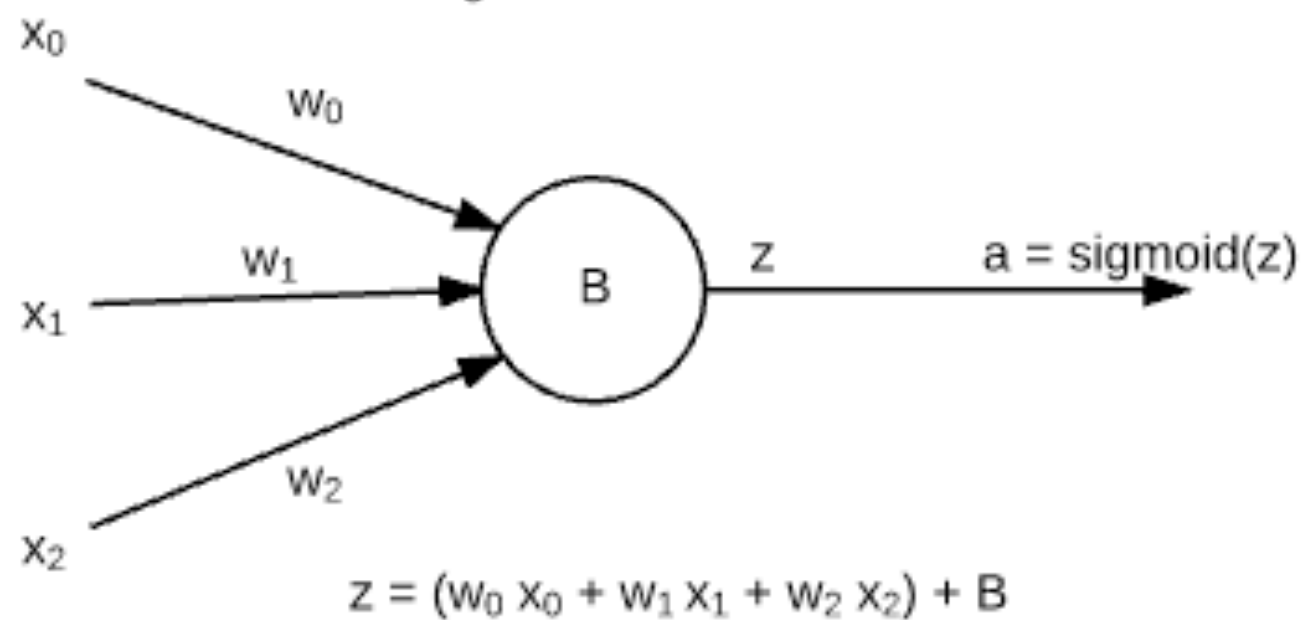


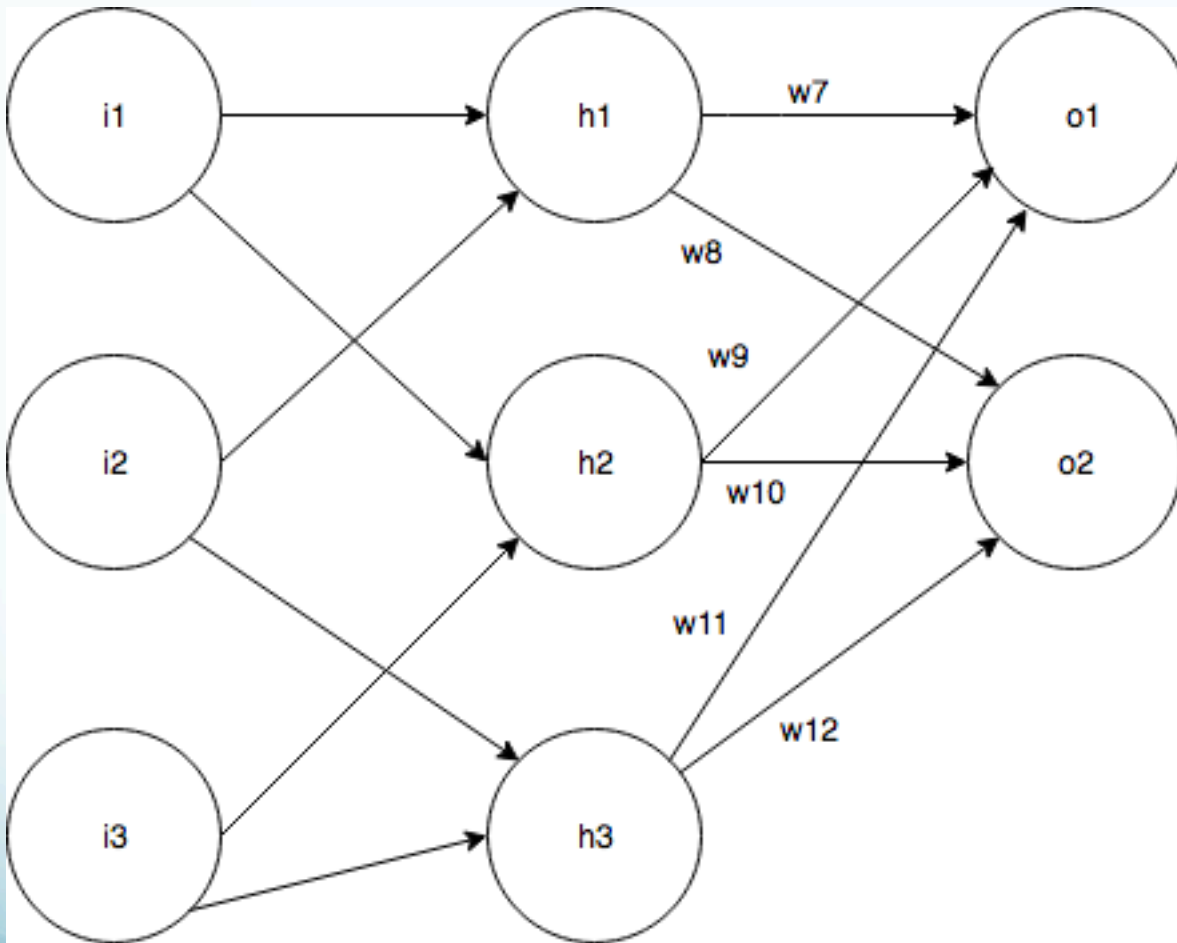
Higher order networks

Kristjan Veskimäe - 2018

Sigmoid Neuron

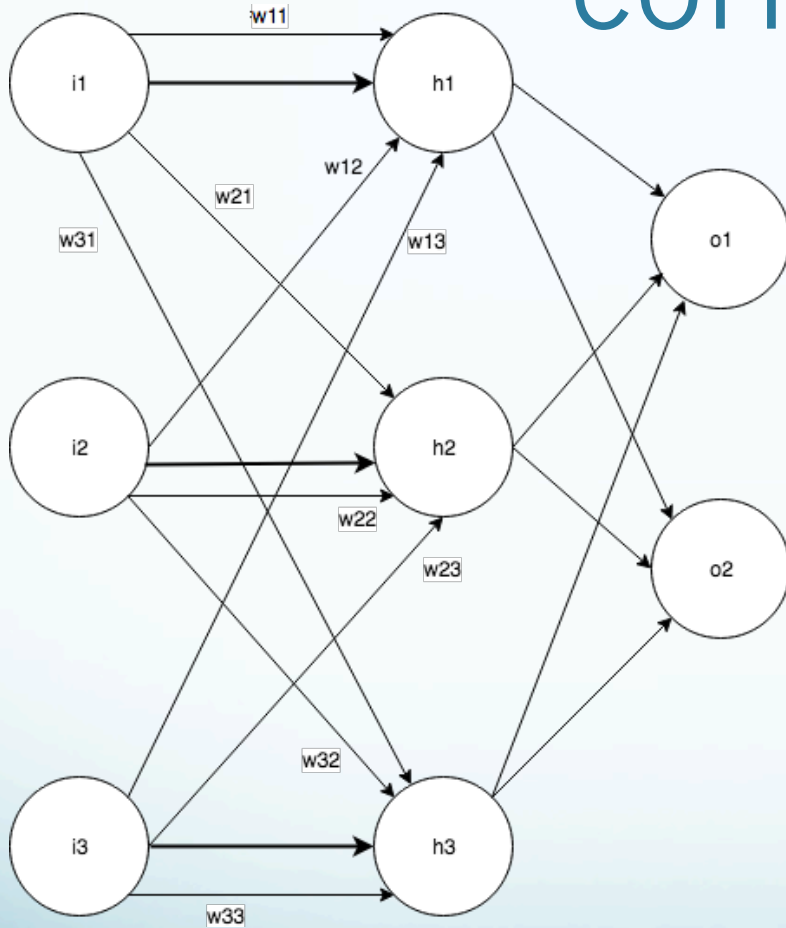


Interaction node: All pairwise interactions



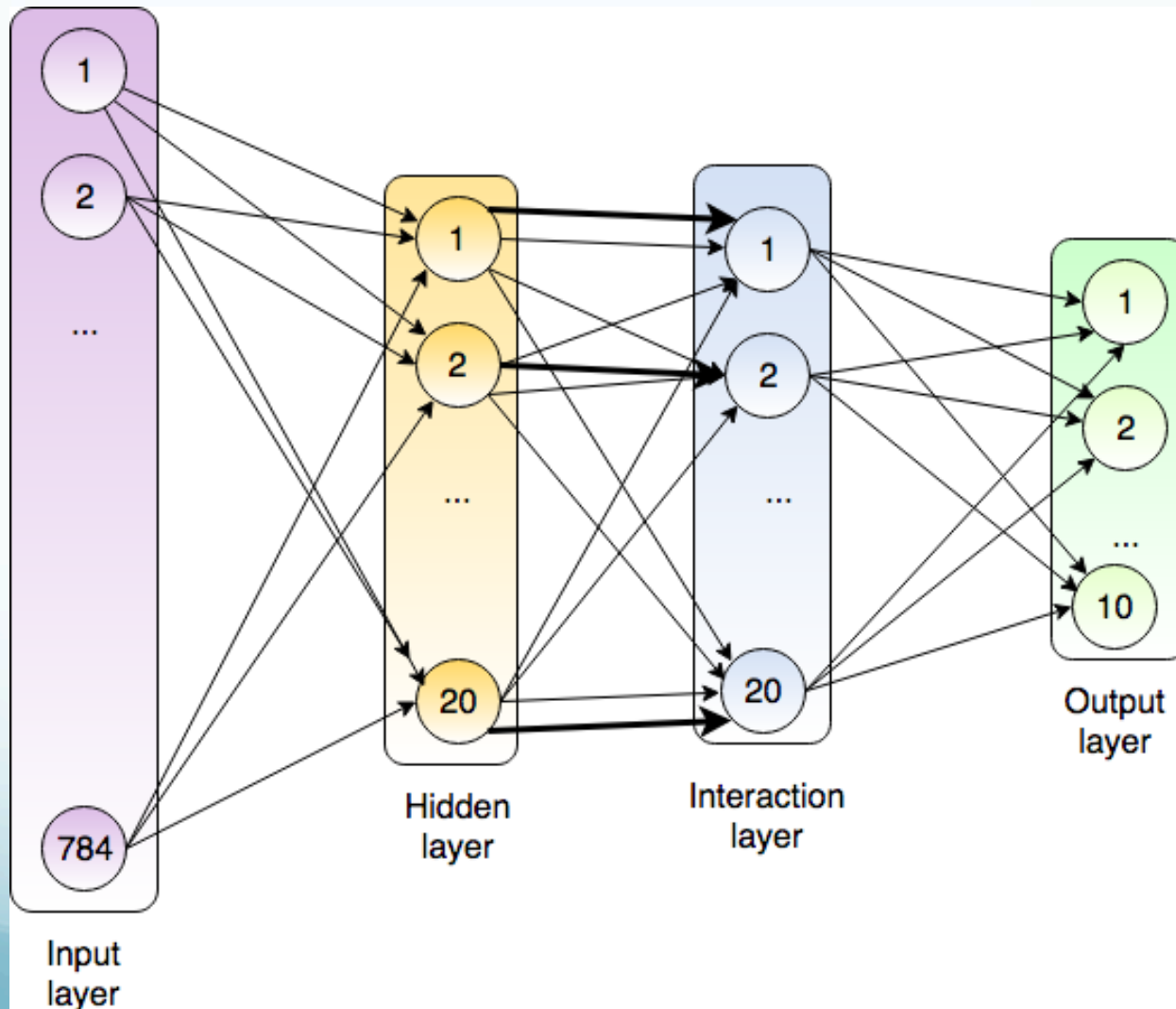
$$net_{h_1} = out_{i_1} \cdot out_{i_2} \cdot w_{1,2}$$

Summed pairwise correlations

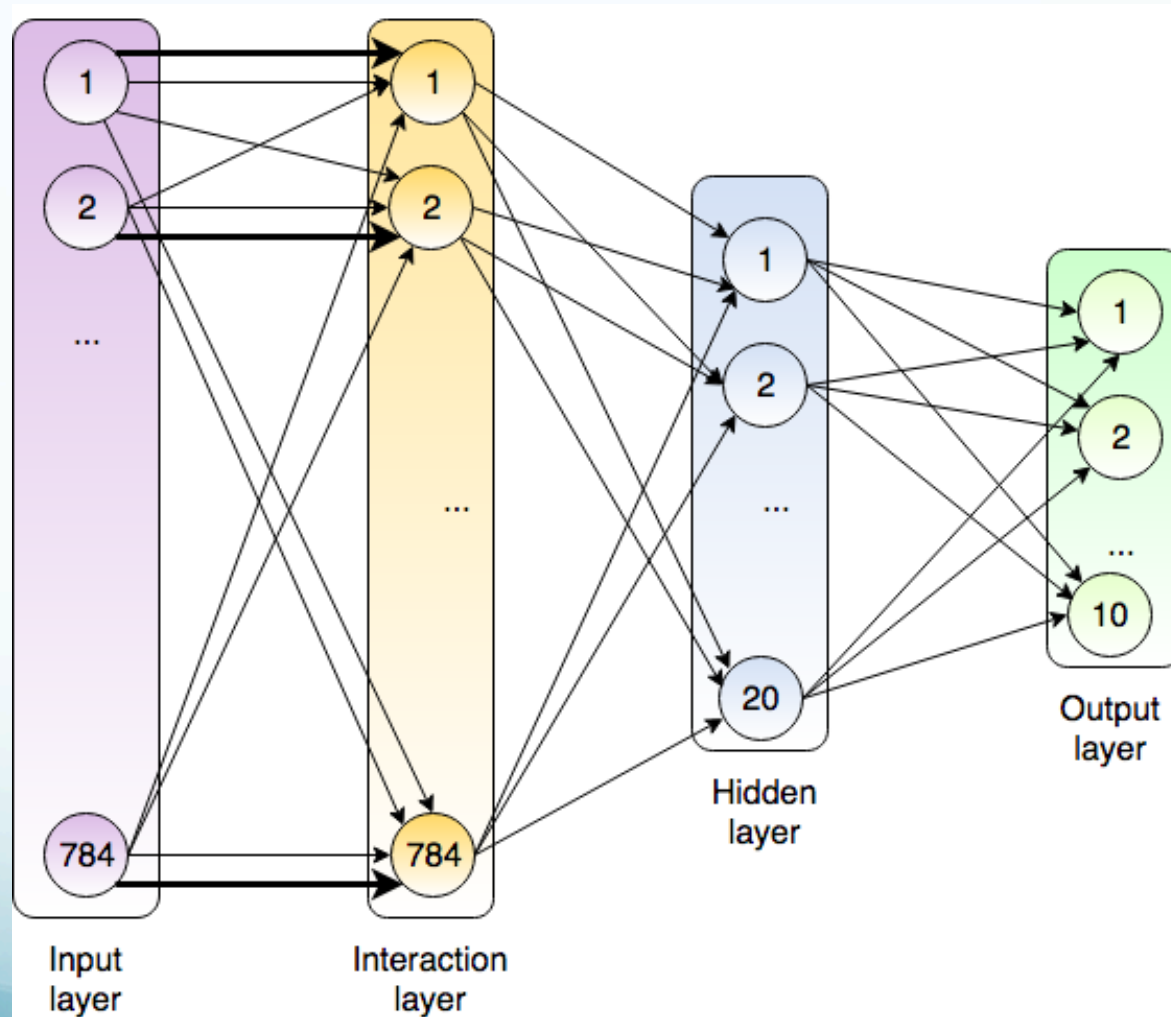


$$net_{h_i} = \sum_j out_{i_i} \cdot out_{i_j} \cdot w_{ij} = out_{i_i} \sum_j out_{i_j} \cdot w_{ij}$$

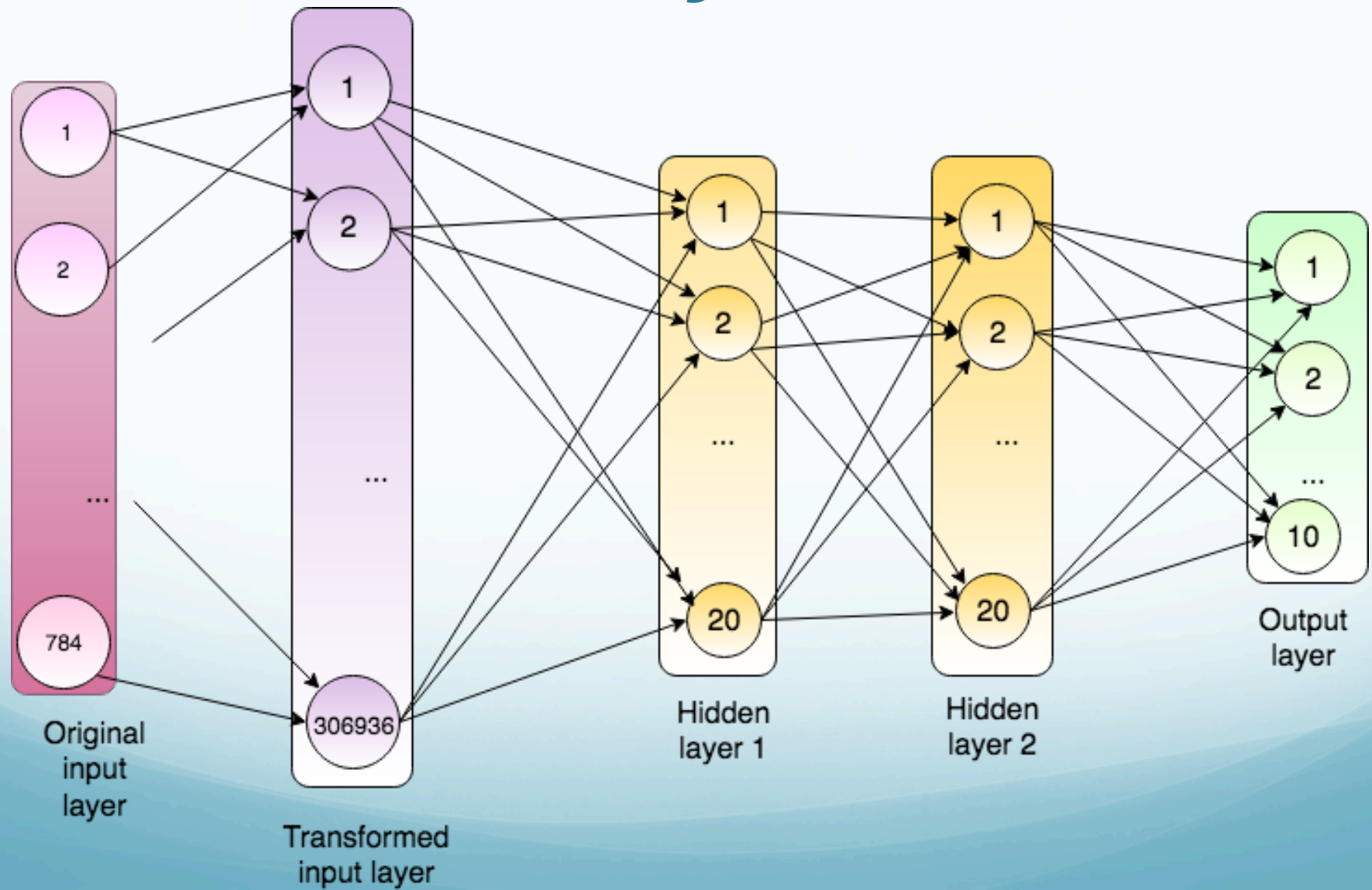
Summed correlations layer, configuration 1



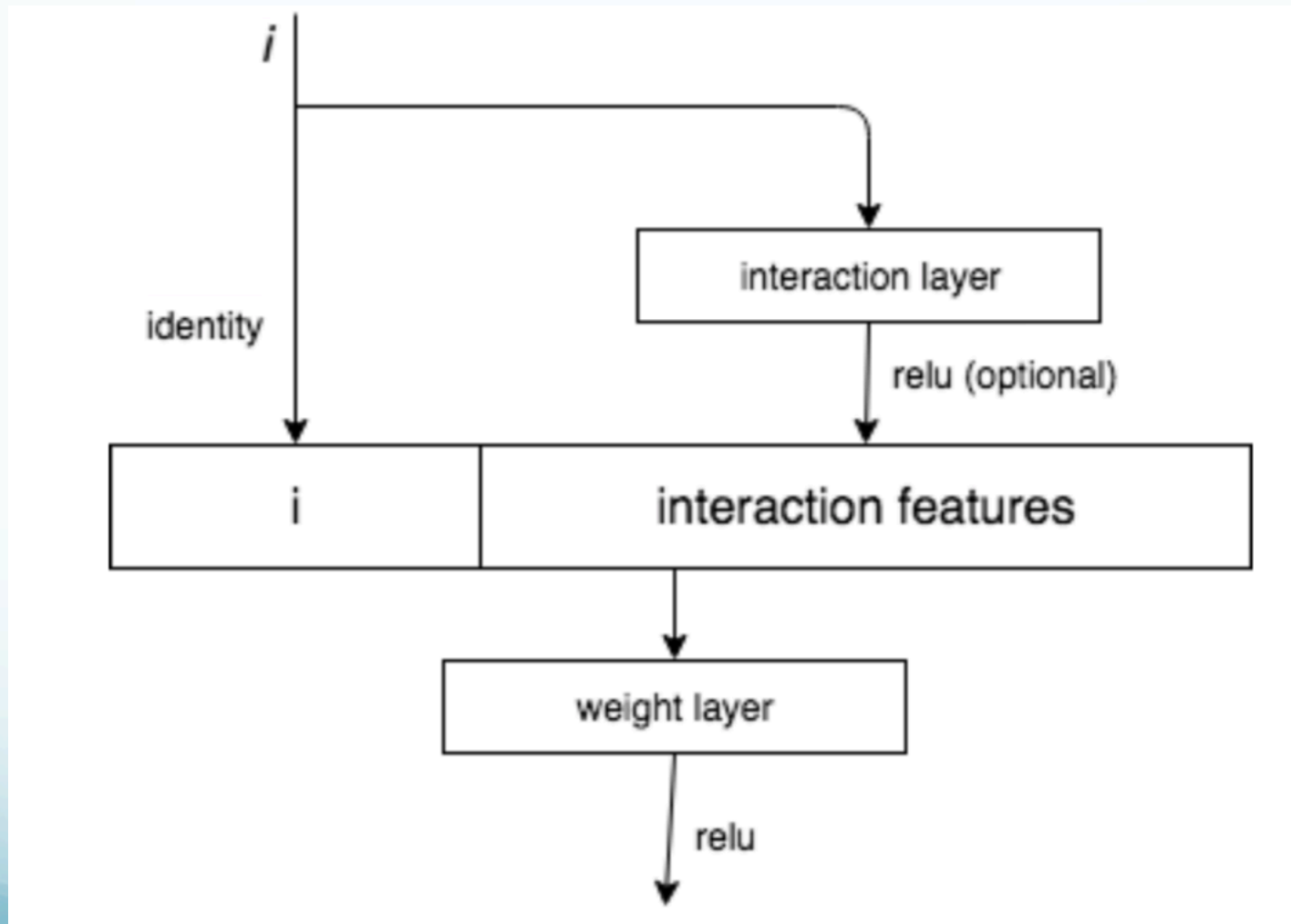
Summed correlations layer, configuration 2



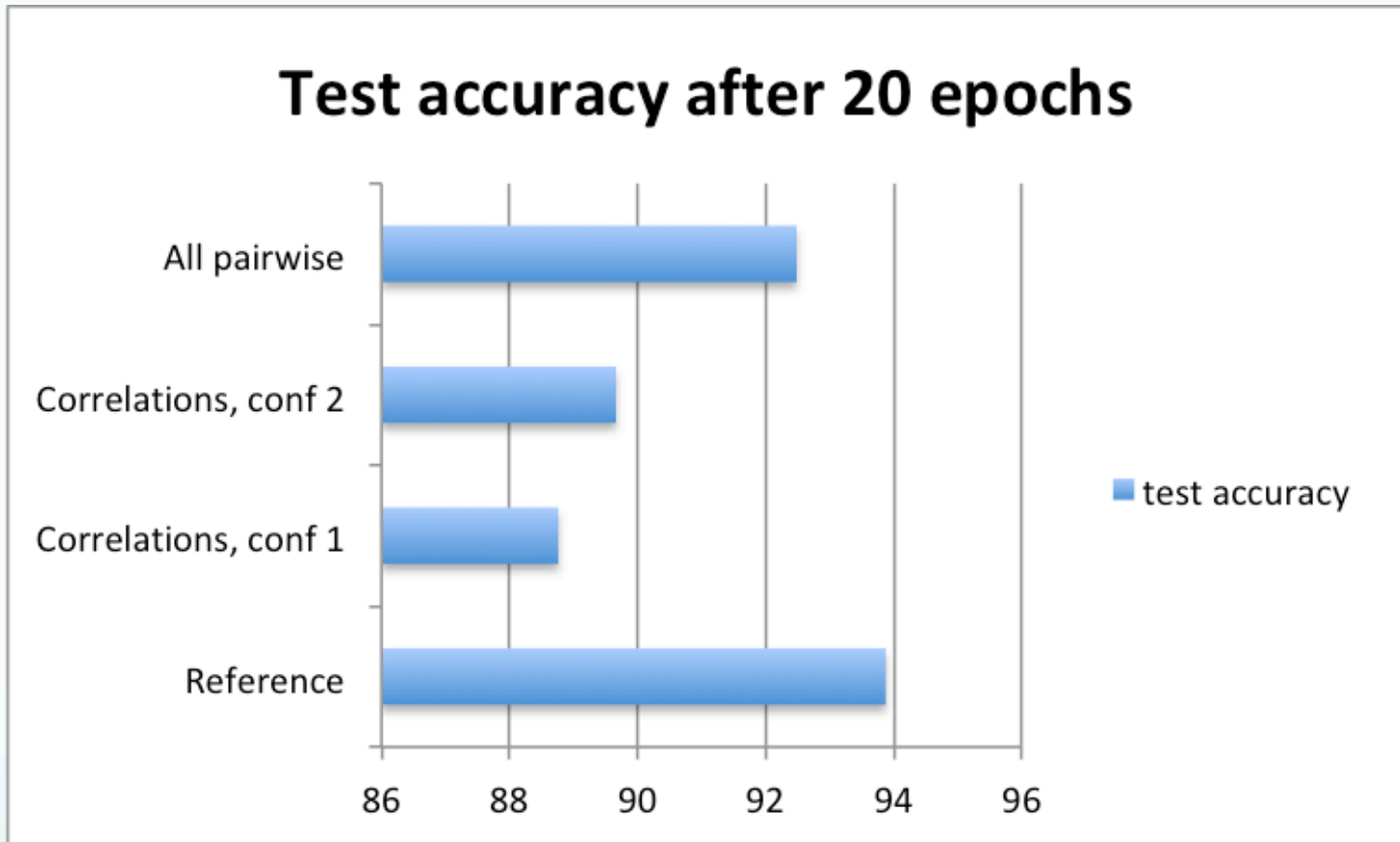
All pairwise interactions layer



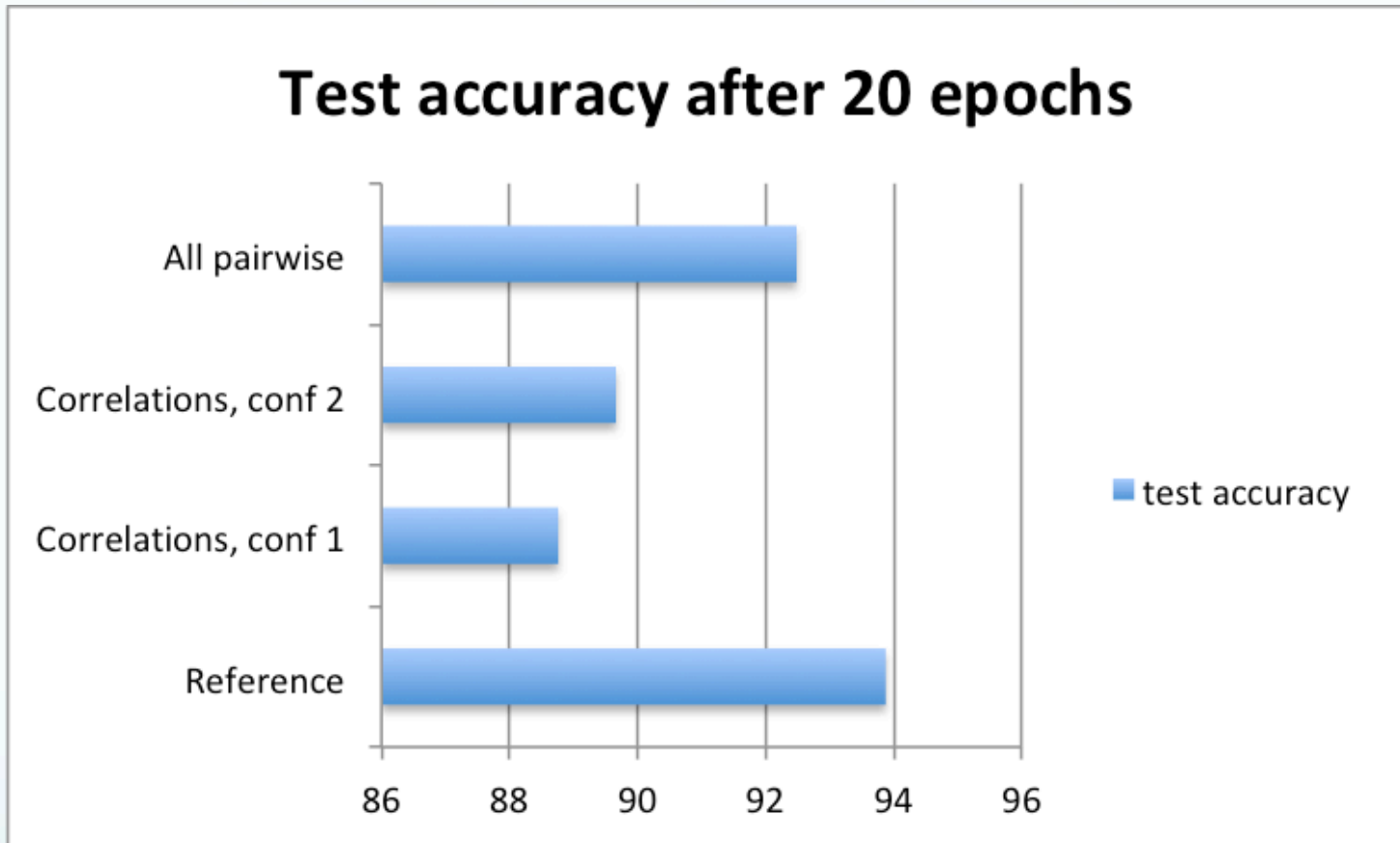
Network architectures with interaction layer



Accuracy

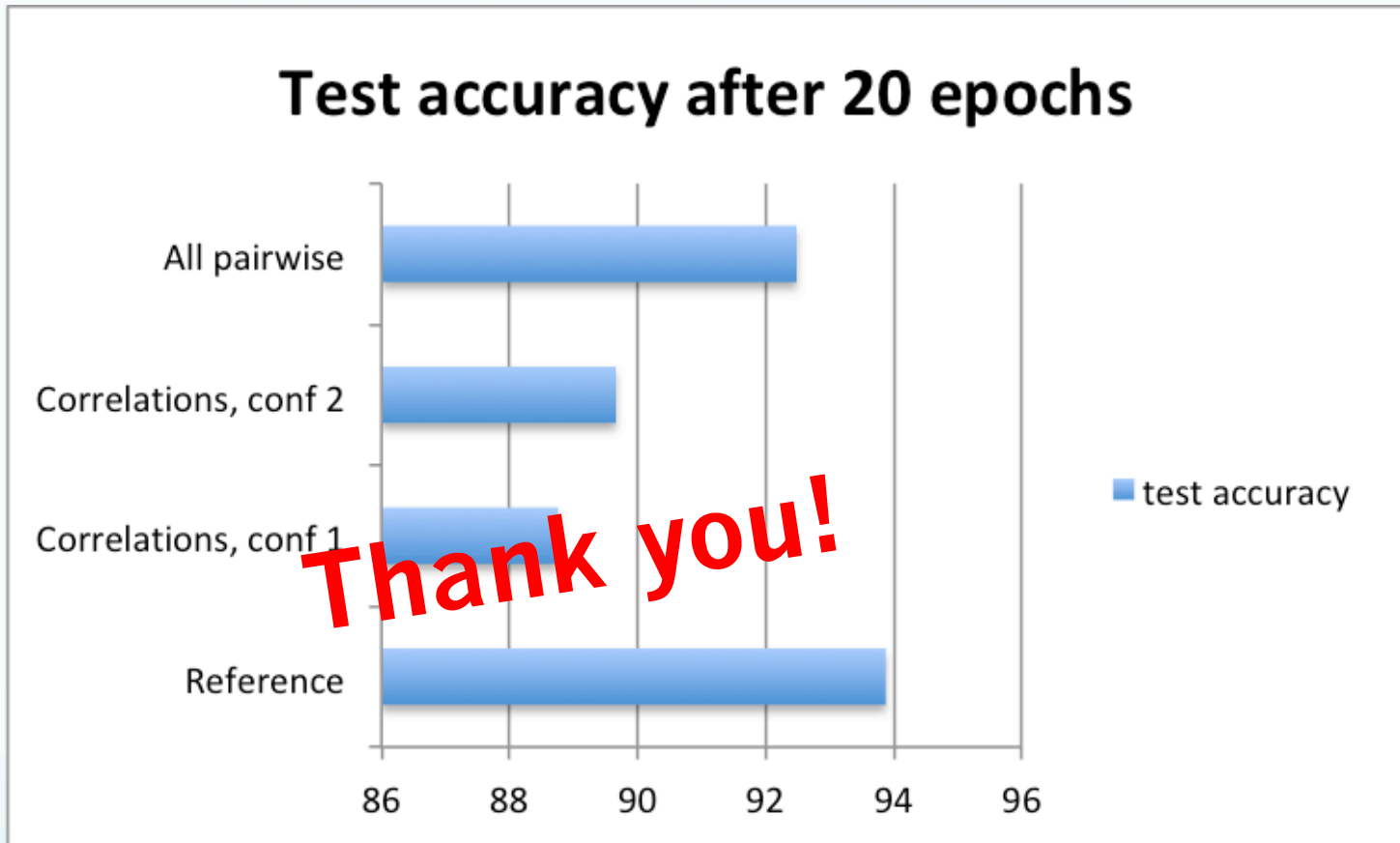


Accuracy



<https://github.com/kveskimae/interaction-units>

Accuracy



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