



Highway Networks for Visual Question Answering

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Highway Networks

- Allows training very deep networks. Srivastava et al trained 50+ layers [1]
- Overcomes vanishing/exploding gradient issues by learning gating mechanism, similar to LSTM but for feed forward networks.
- Includes 'Transform' gate (T) and 'Carry' gate (C)
- Simple Perceptron

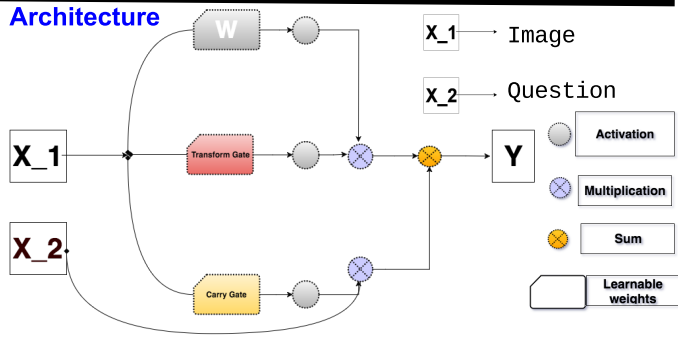
$$y = H(x, W) + b$$

Highway MLP

$$y = H(x, W_H) \cdot T(x, W_T) + x \cdot C(x, W_C) + b$$

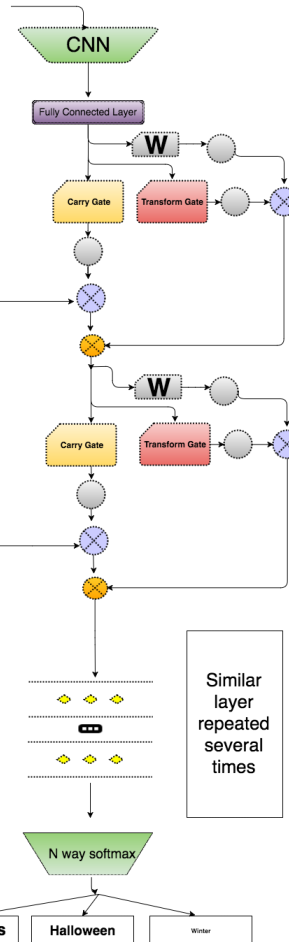
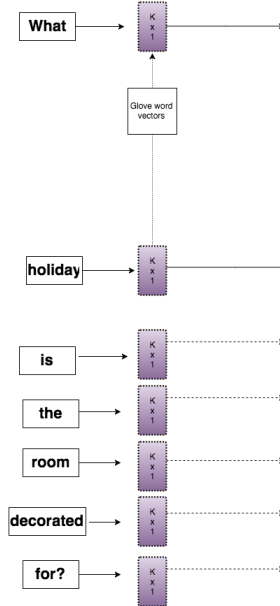
$$T(x) = \sigma(W_T x + b_T) \quad C(x) = 1 - T(x)$$

Architecture

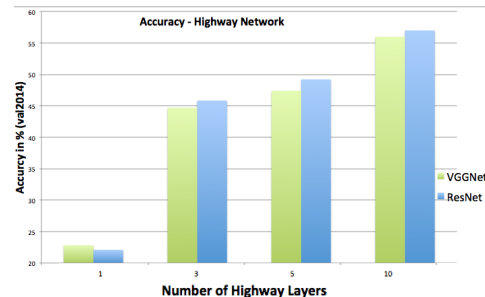
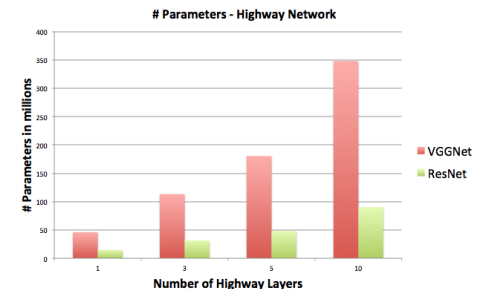


Results [Real Test Standard]

	Yes/No	Number	Other	Overall
open	82.11	37.73	51.91	62.88
MC	81.95	38.56	56.4	65.07



Experiments



Hyper parameter search

