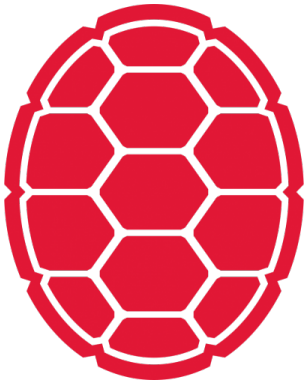
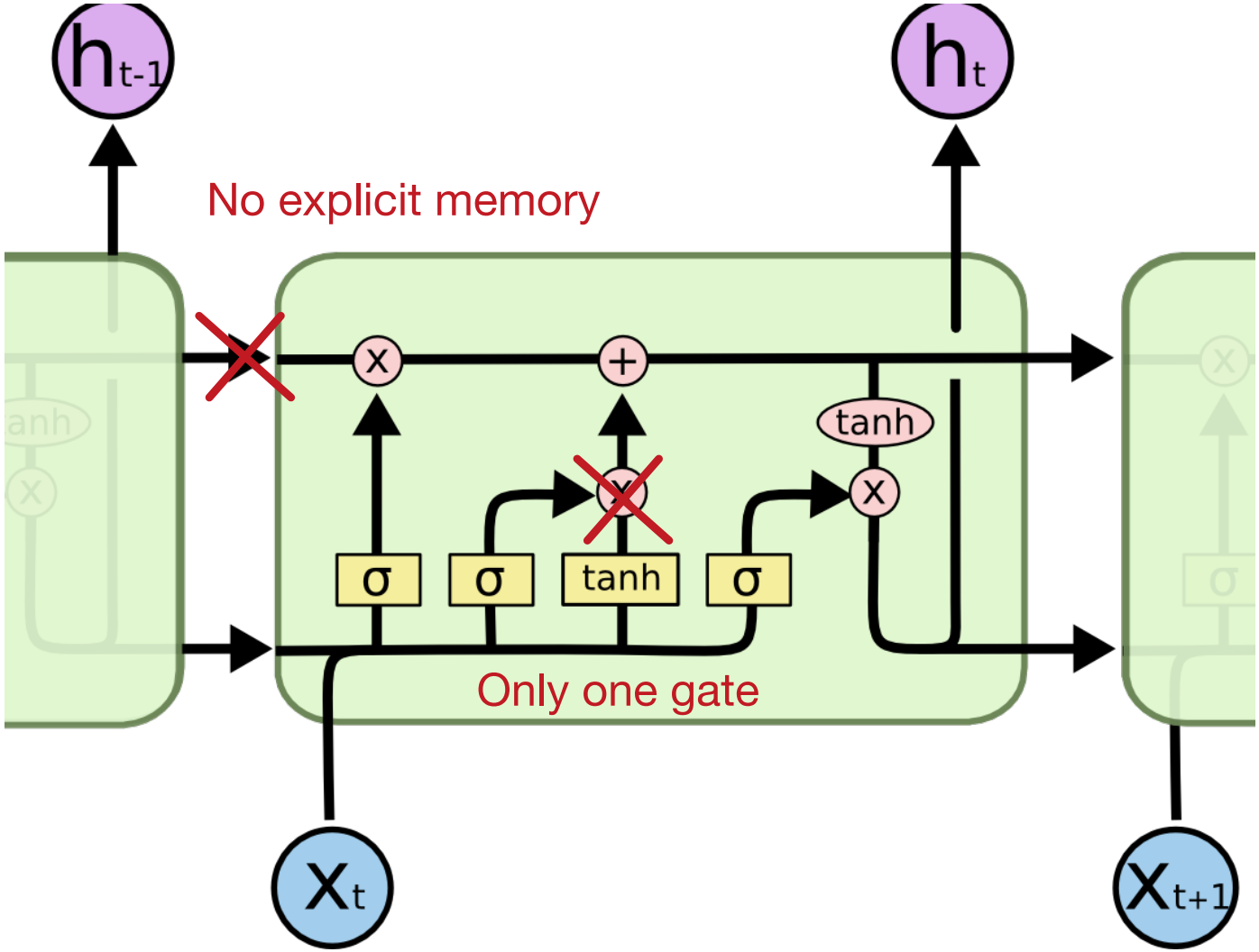


Sequence Models

Machine Learning: Jordan Boyd-Graber
University of Maryland
LSTM VARIANTS

GRU simplifies slightly



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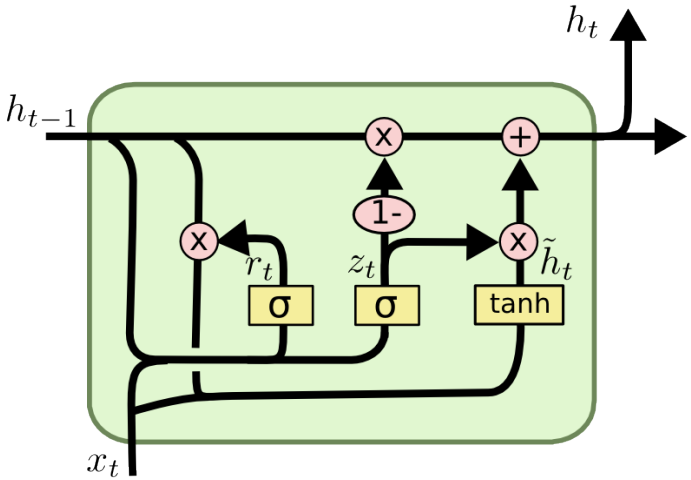

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Slightly fewer parameters

What's most important part of LSTM

Greff et al. explore

- No Input Gate (NIG)
- No Forget Gate (NFG)
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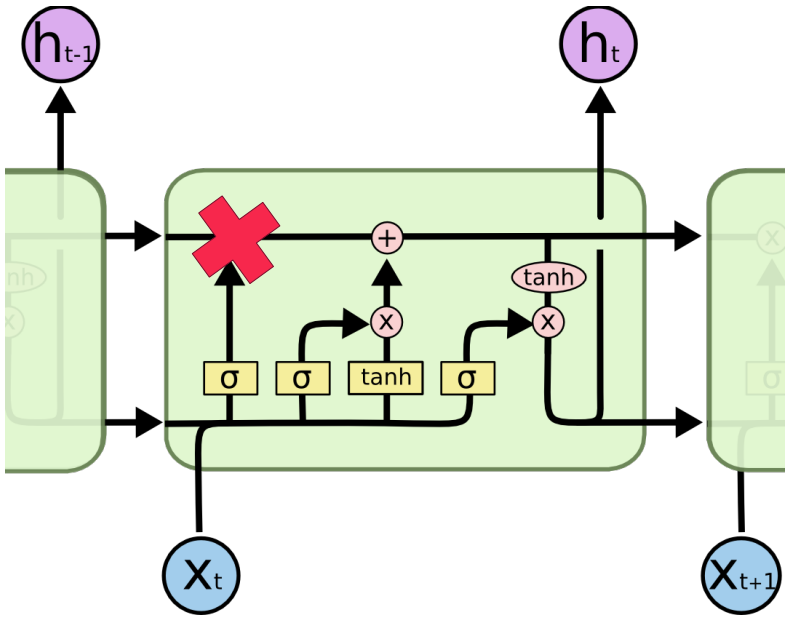

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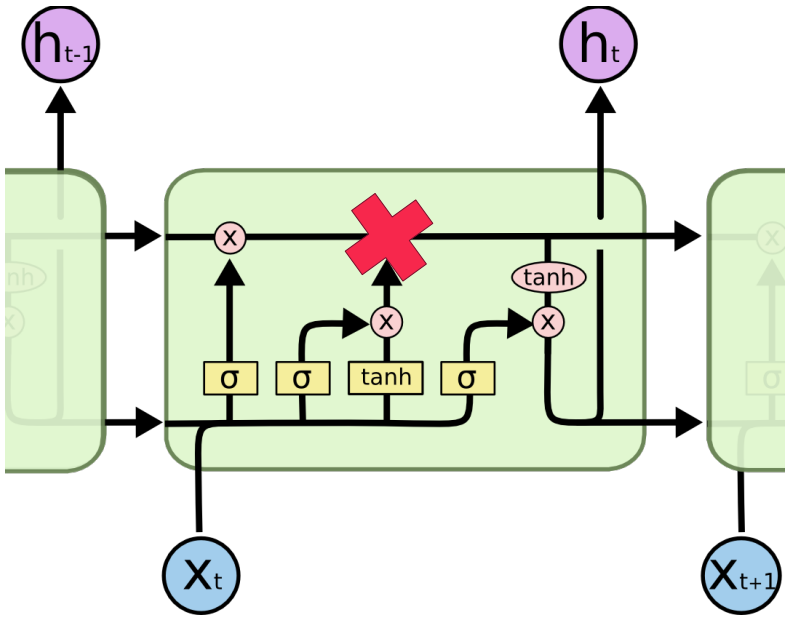

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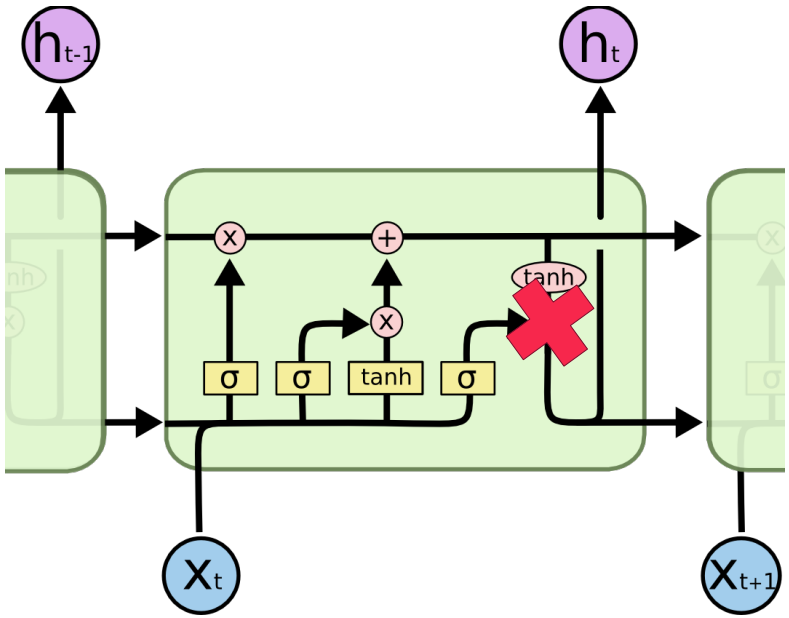

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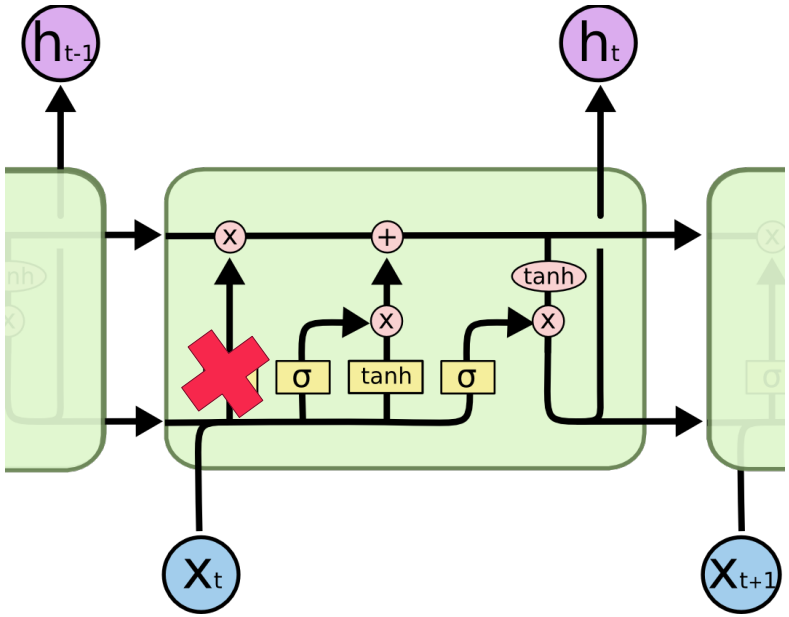

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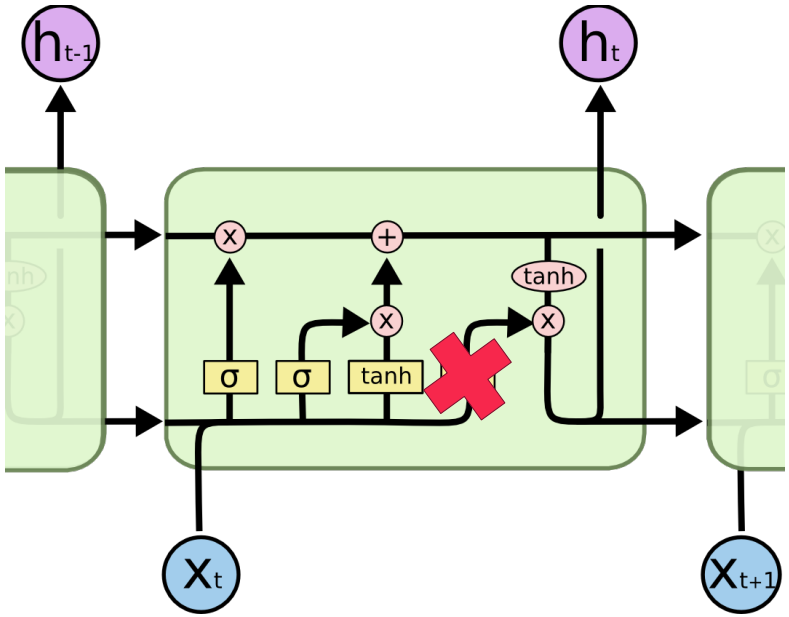

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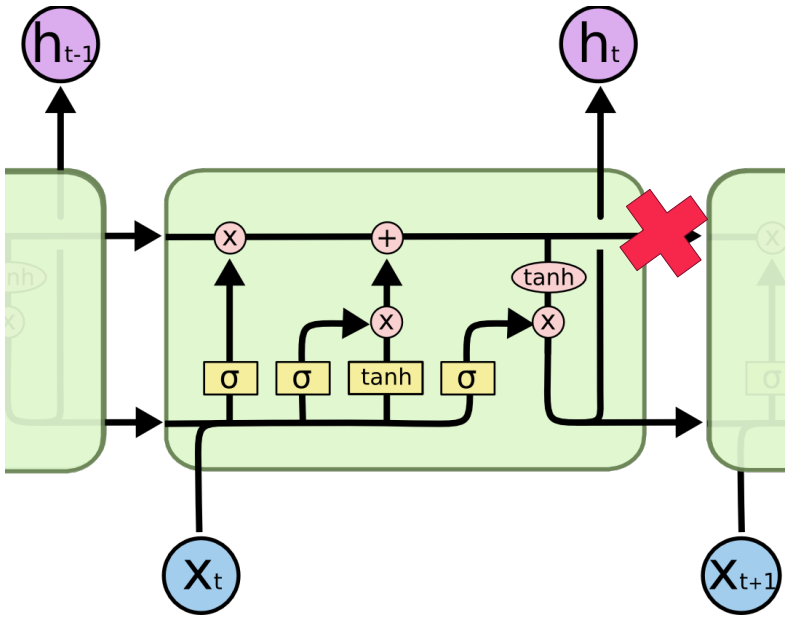

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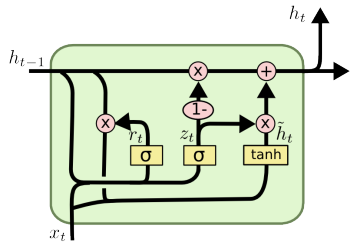

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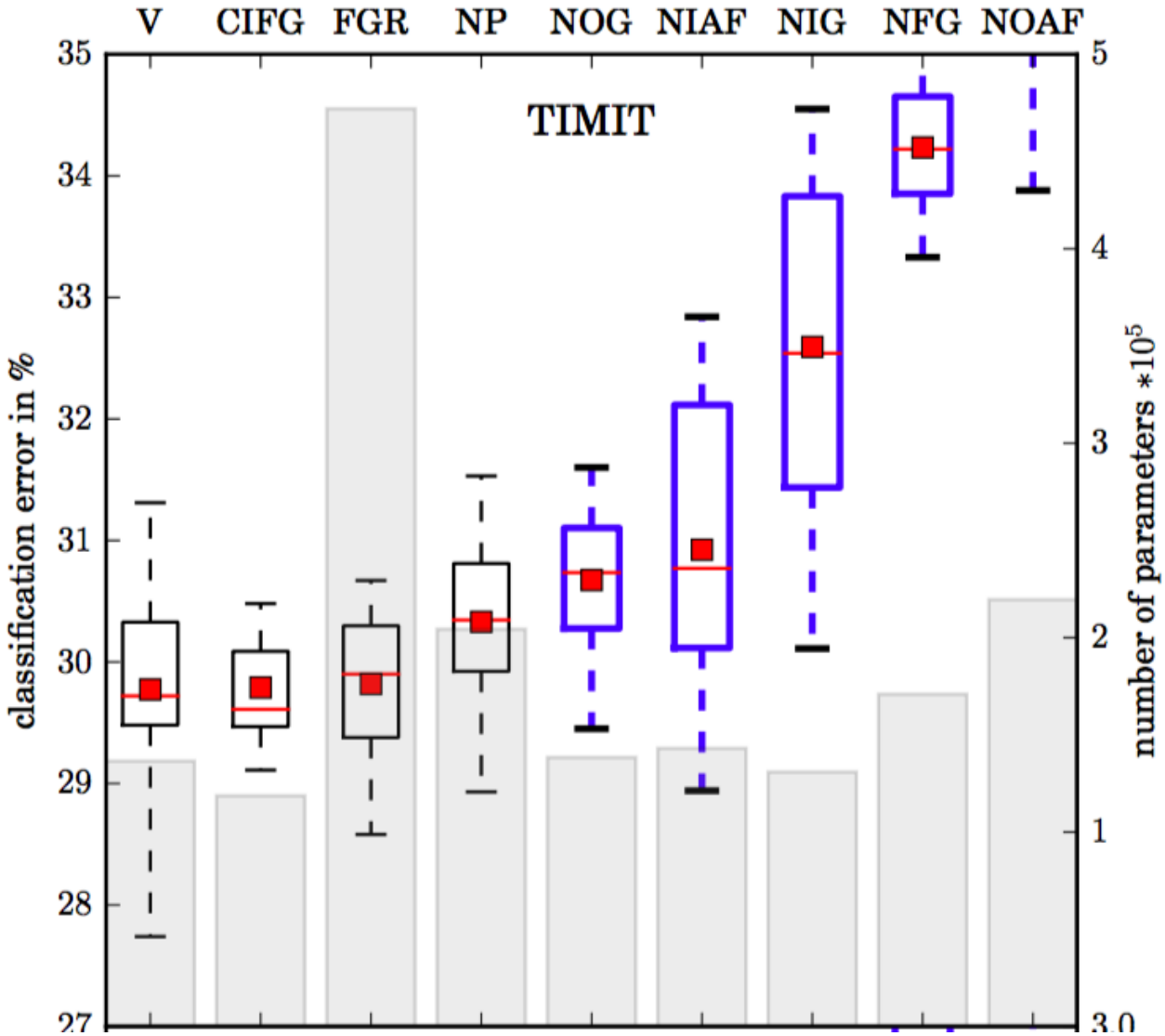
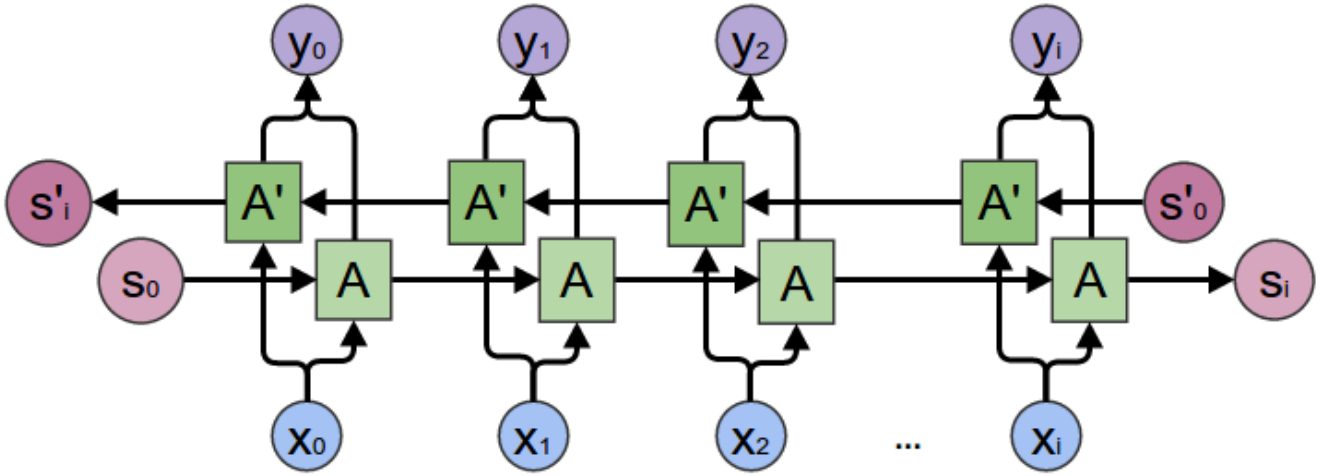


Bi-directional LSTMs



Simple extension, often slightly improve performance (but don't always make sense for task)

Comparing architechtures

- GRUs seem competitive
- LSTM seems to be good tradeoff
- Bi-directional often offers slight improvement