Text Classification using RNN

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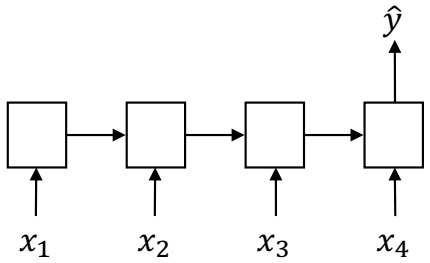
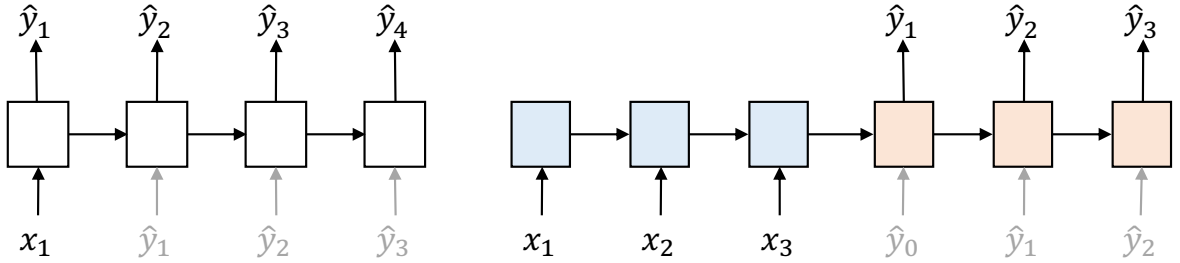
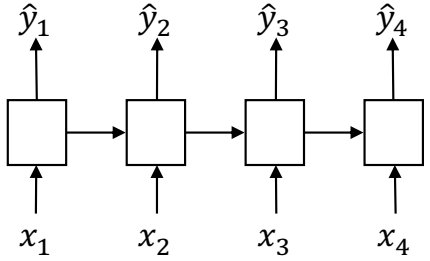
NLP Applications using RNN

Type	Architecture	Applications
Many to One		Text Classification
One to Many		NLG, Machine Translation
Many to Many		POS Tagging, MRC

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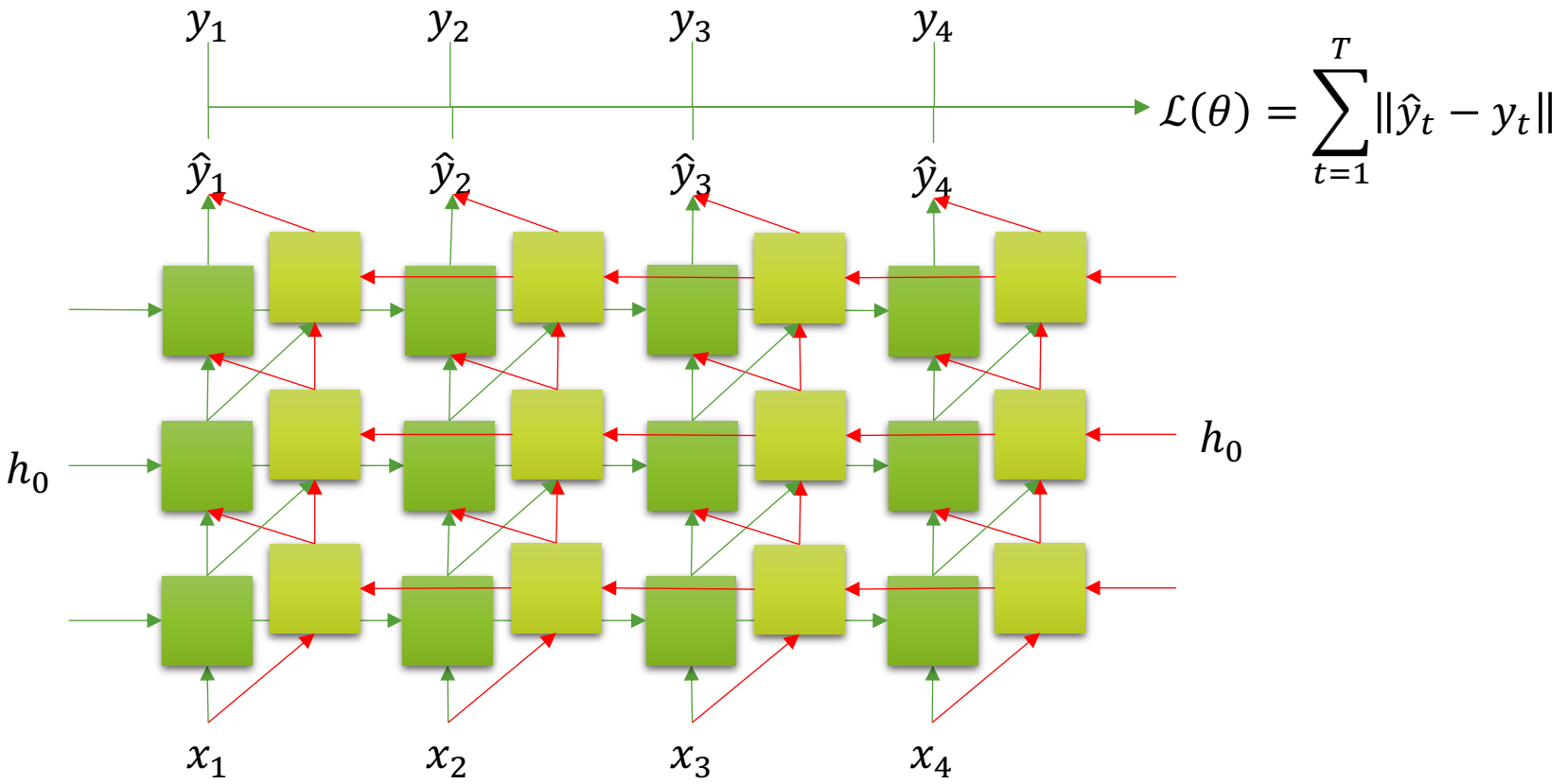
Text Classification using RNN

- with Bidirectional Multi-layered RNN



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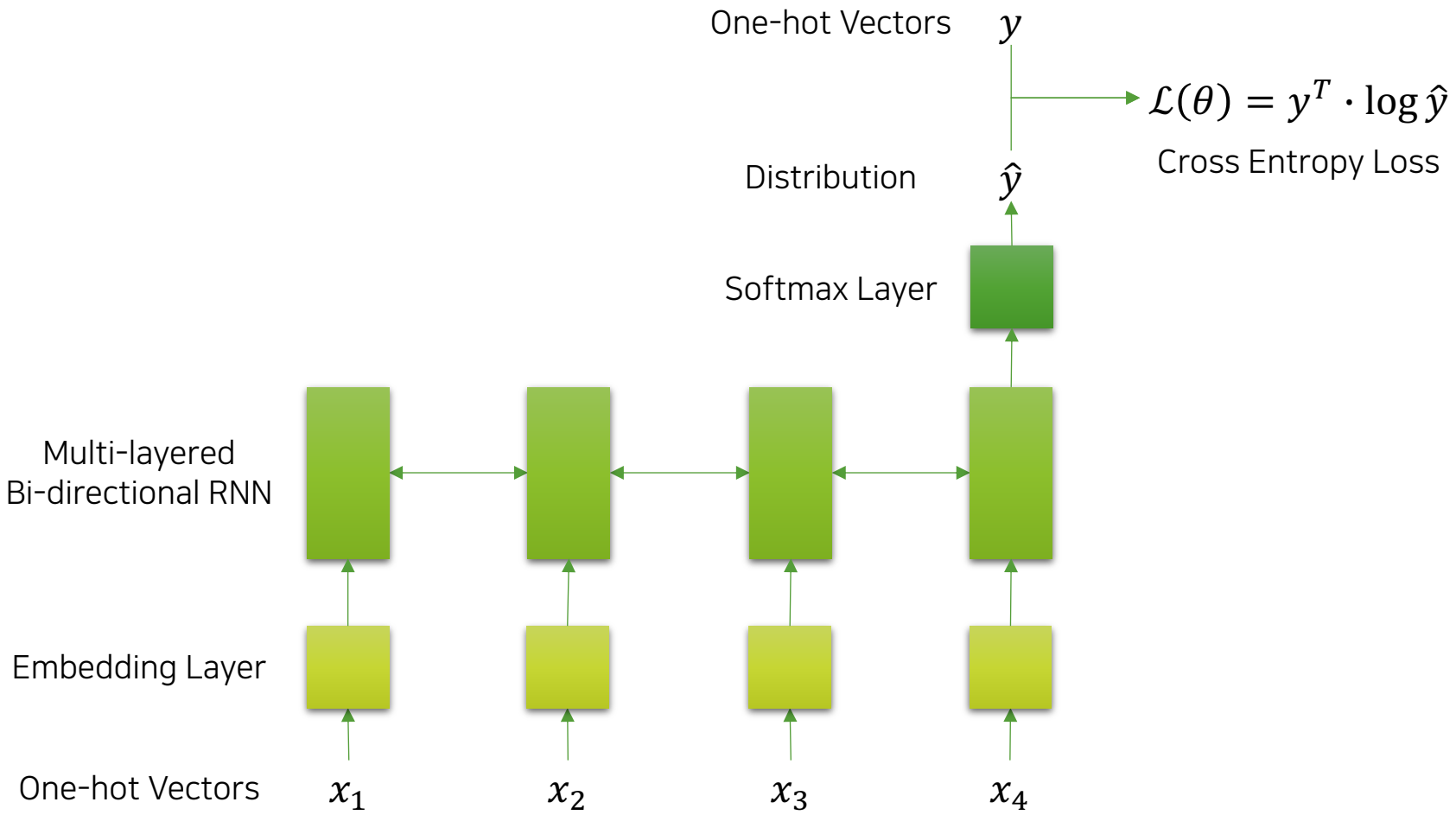
How the Classifier Works



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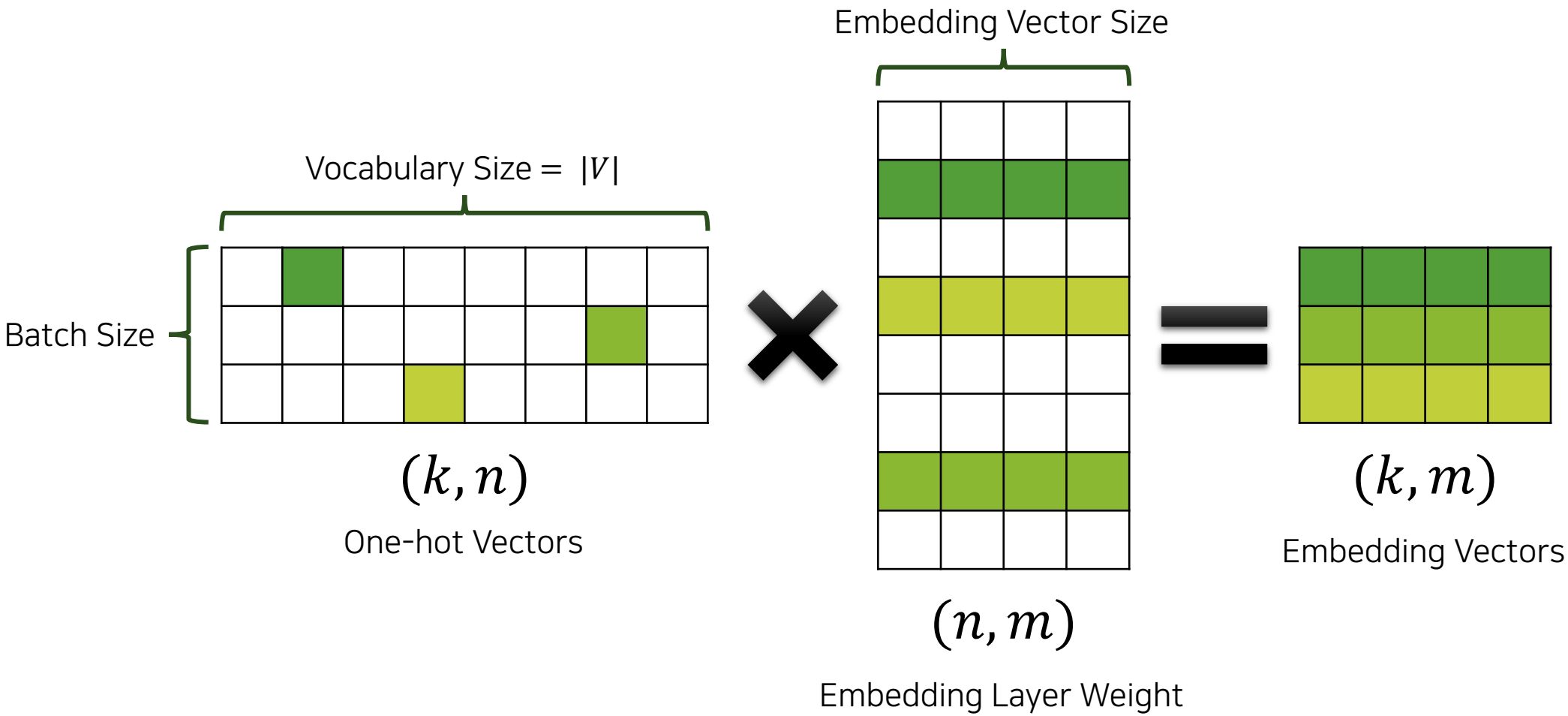
Embedding Layer



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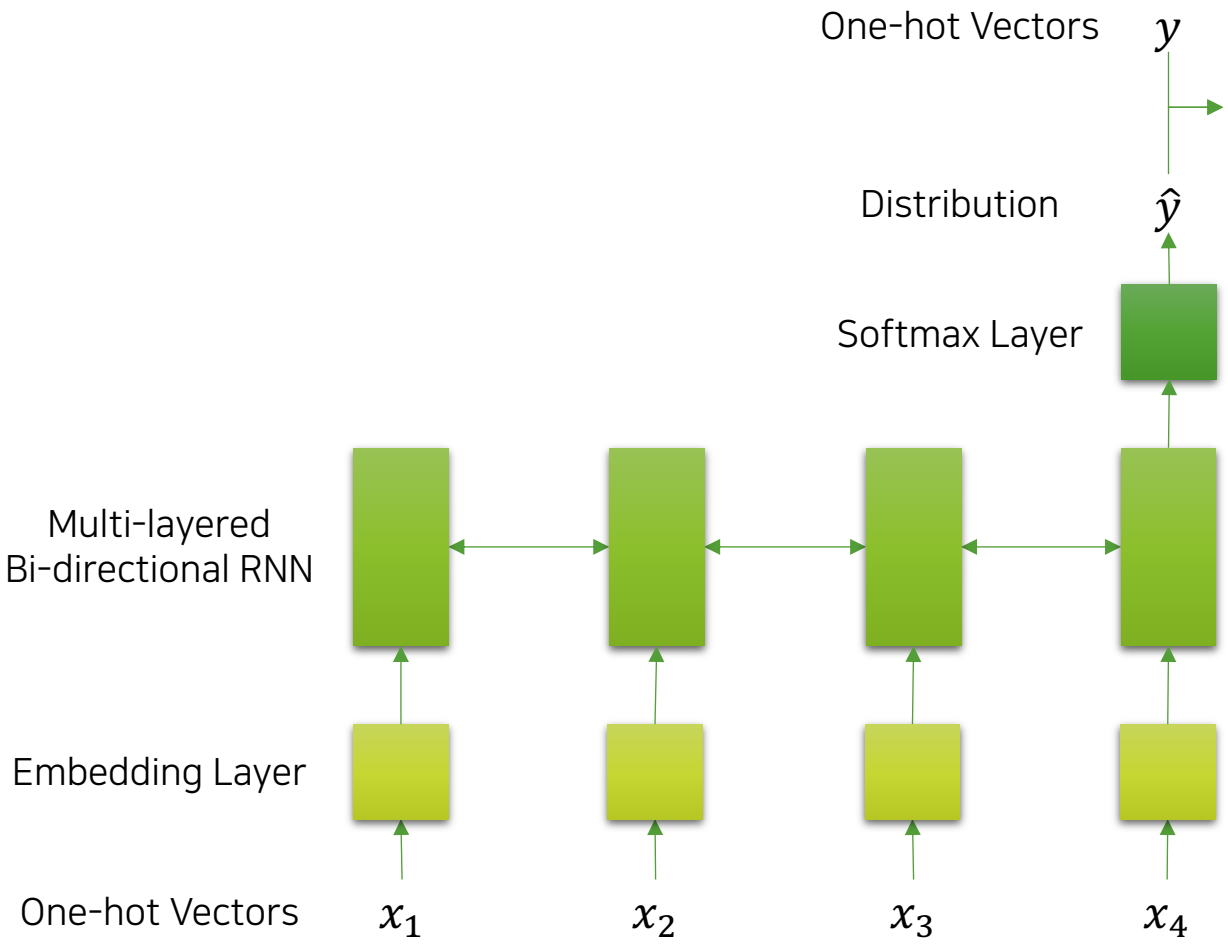
How the Classifier Works with Mini-batch



$|\hat{y}| = (n, 1, |C|)$

Softmax Layer

$|\text{rnn}(\text{emb}(x_T))| = (n, 1, h * 2)$

Pick last time step

$|\text{rnn}(\text{emb}(x_{1:T}))| = (n, T, h * 2)$

RNN

$|\text{emb}(x_{1:T})| = (n, T, d)$

Embedding Layer

$|x_{1:T}| = (n, T, 1)$

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Summary

- Non-autoregressive task이므로 입력을 한번에 받게 된다.
  - 따라서 모든 time-step을 한번에 병렬로 처리 가능

- Feed-forward 과정
  1) One-hot vector를 입력으로 받아 embedding layer에 넣어준다.
  2) Embedding vector를 RNN에 넣어 출력을 얻는다.
  3) RNN의 출력값 중 마지막 time-step의 값을 잘라낸다.
  4) 잘라낸 값을 softmax layer에 통과시켜 각 클래스별 확률값을 얻는다.