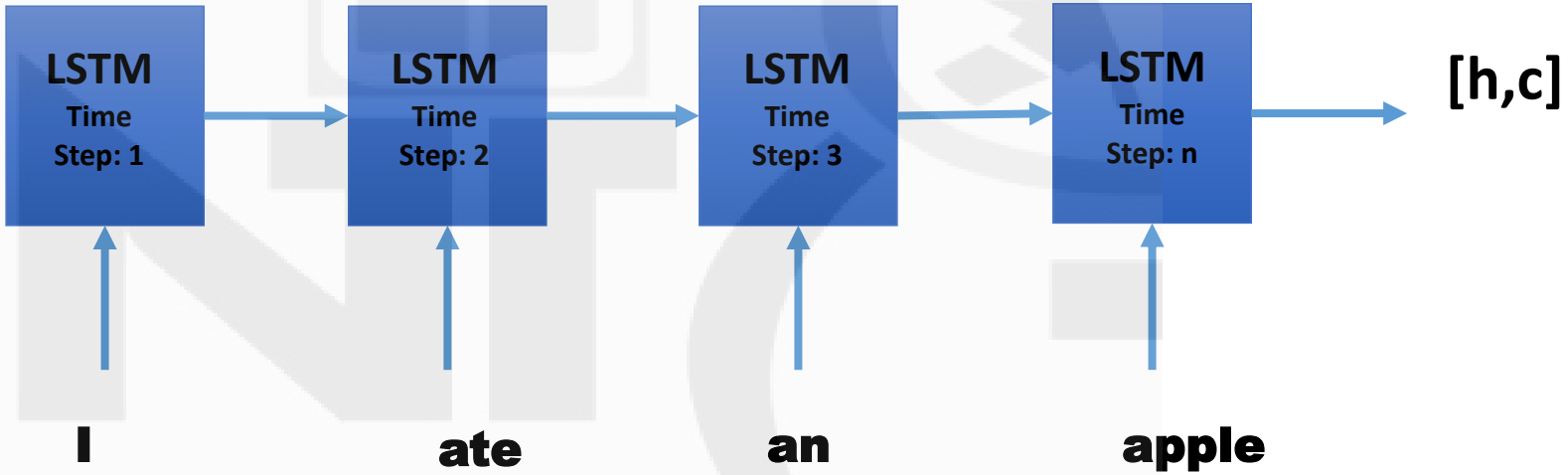
Improving Seq2Seq Model

MUKESH KUMAR


LSTM
Time
Step: 1
LSTM
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Step: 3
LSTM
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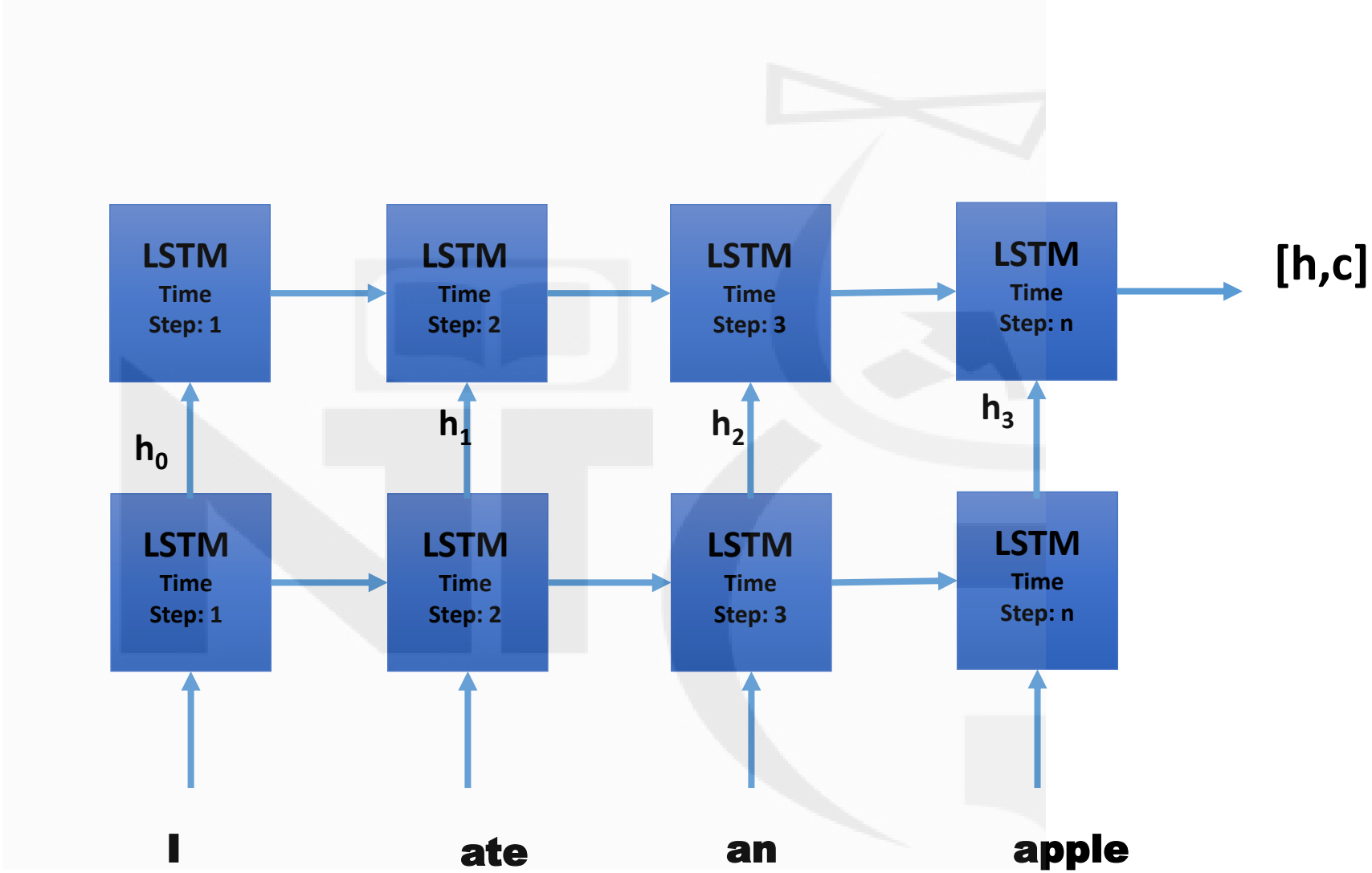
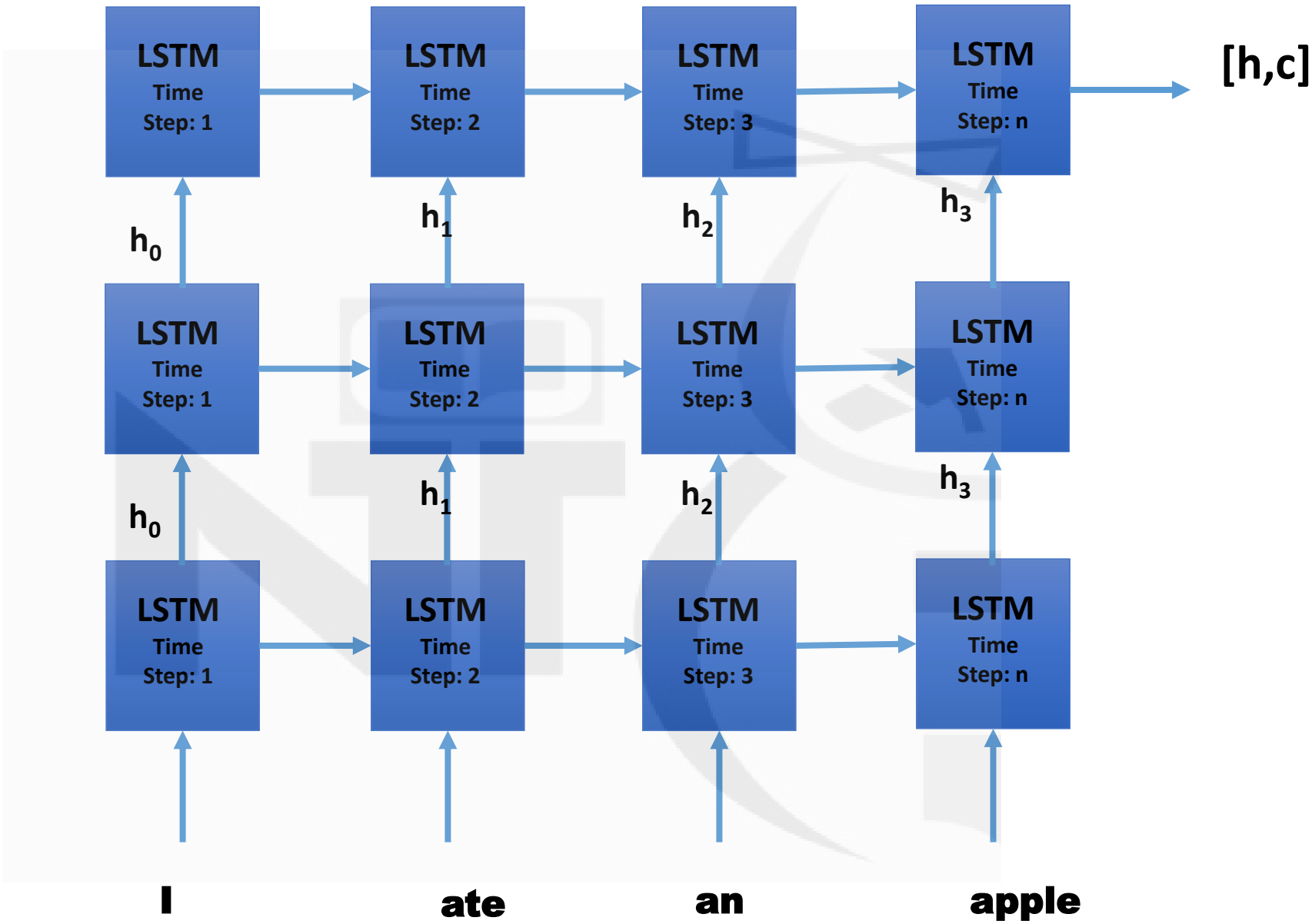


Two LSTM stacked over each other to learn deeper features



We can stack more

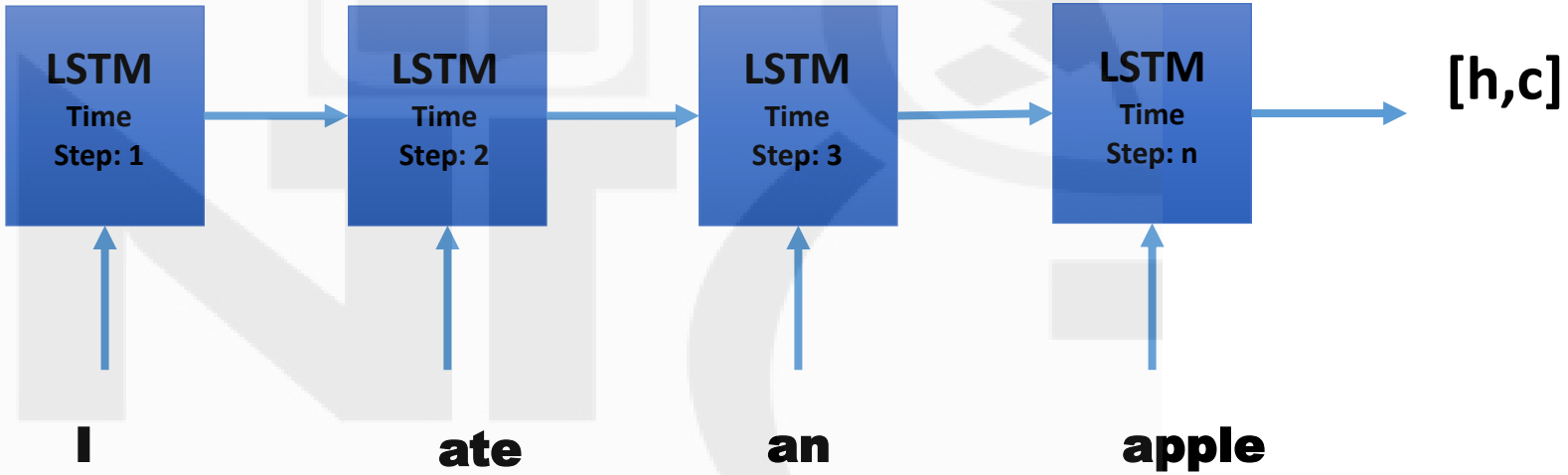
```
model.add(LSTM(256, return_sequences=True))
model.add(LSTM(256, return_sequences=True))
model.add(LSTM(256, return_sequences=True))
model.add(LSTM(256))
```

Implementing in Keras - 4 stacked LSTMs

I have an apple

I have an apple phone

So far ….


LSTM
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LSTM
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LSTM
Time
Step: 3
LSTM
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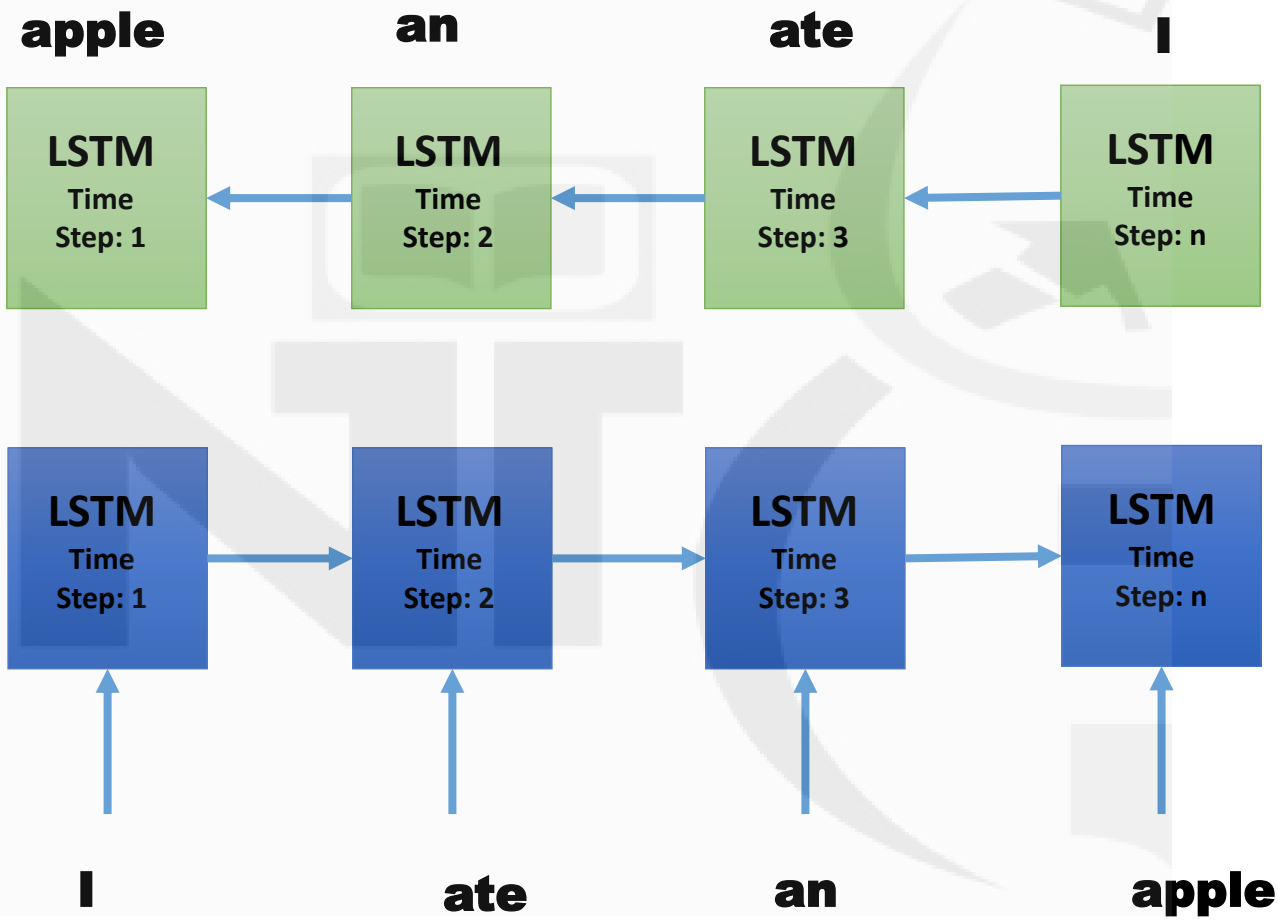
BIDIRECTIONAL LSTM

We use two LSTMs

Bidirectional LSTM



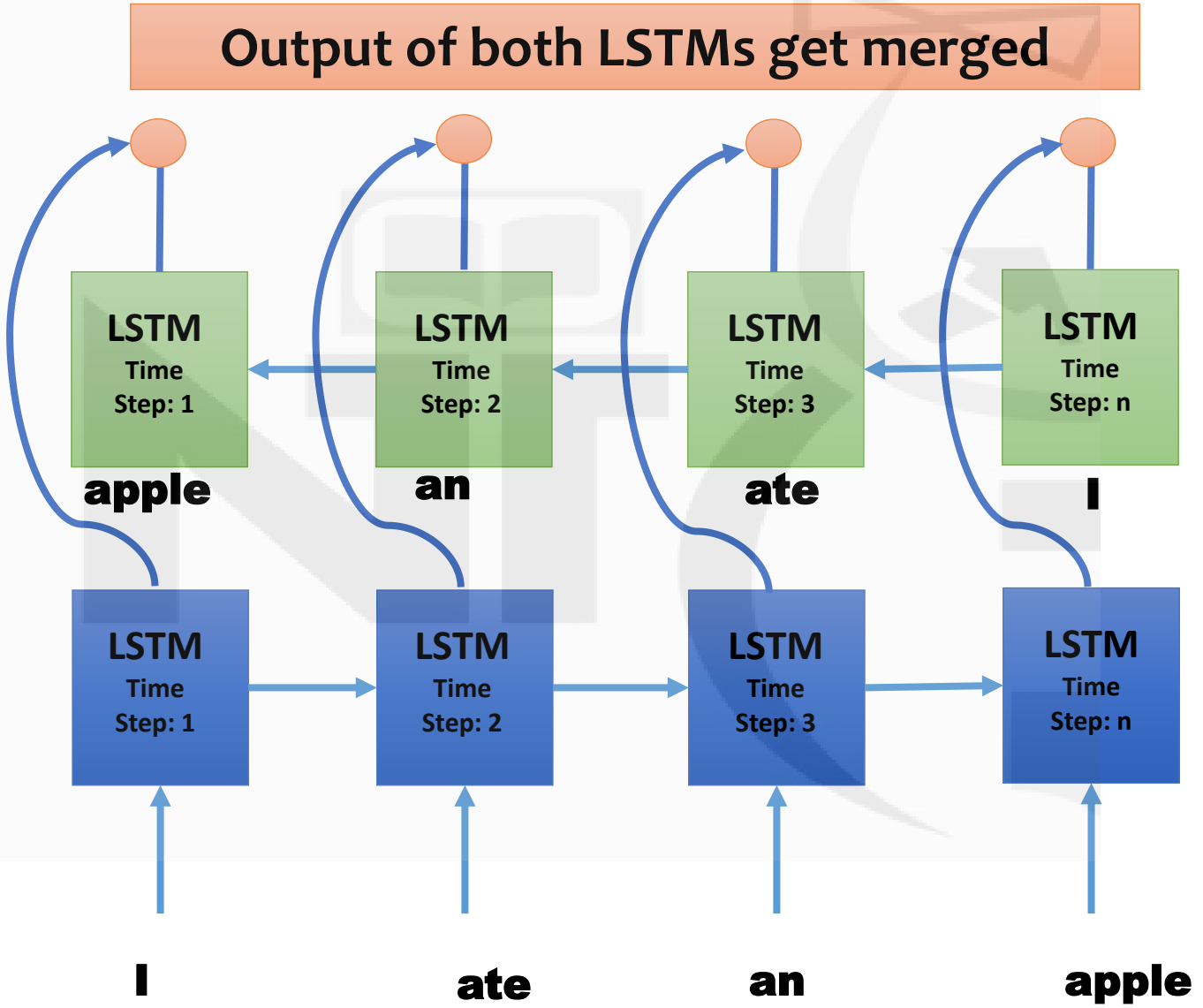
Bidirectional LSTM

We can use two LSTMs.

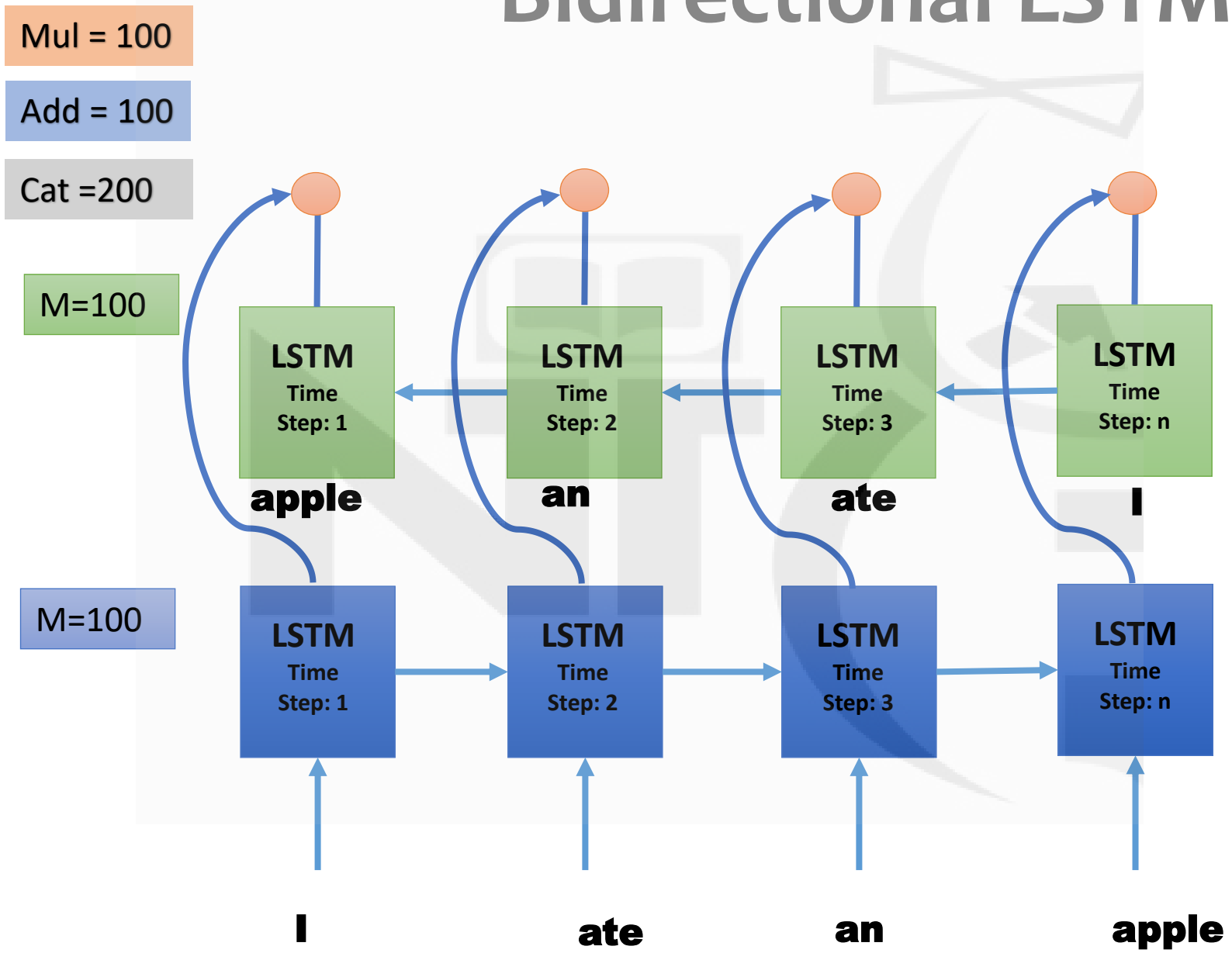
- Data for one LSTM gets fed in forward direction
- while for other LSTM, data is fed in reverse direction for better learning

What is the output Bidirectional LSTM

Bidirectional LSTM



Bidirectional LSTM



Implementing in Keras - Bidirectional LSTM

```
model.add(Bidirectional(LSTM(256, return_sequences=True,
merge_mode='concat')))
```

merge_mode can be 'concat', 'sum' or 'mul'

Bidirectional LSTM

But Long Sentences can be problematic