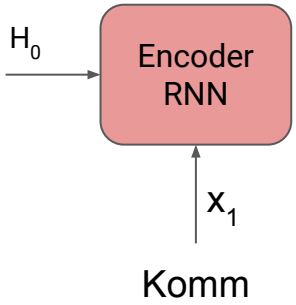
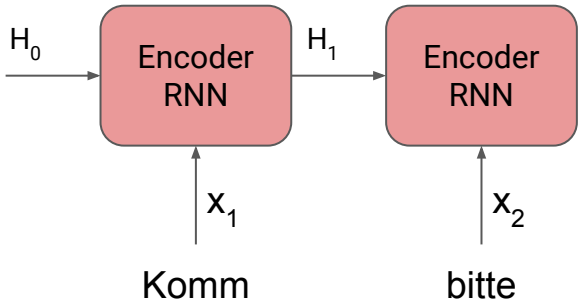
Understanding Transformer Architecture

Recap



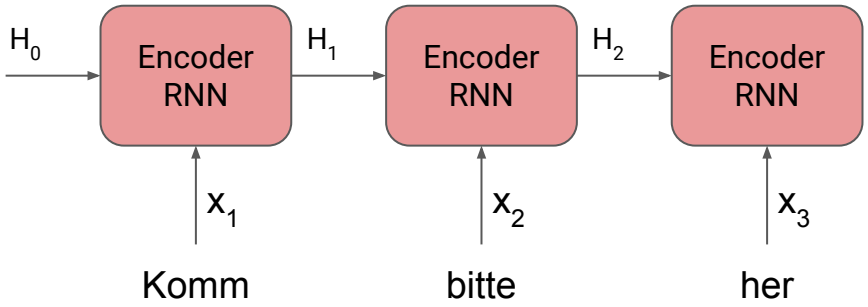
ENCODER

Recap



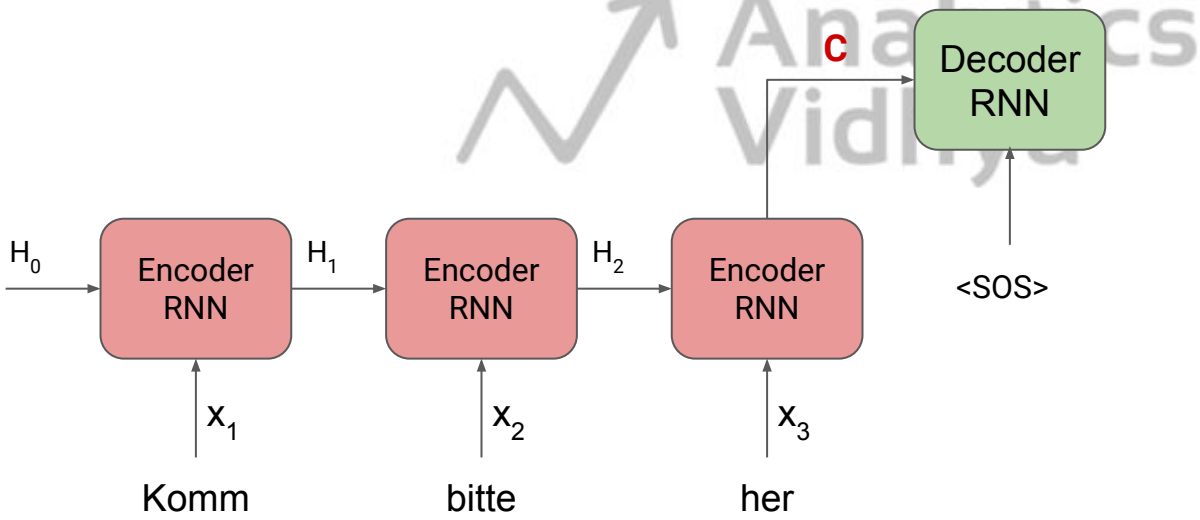
ENCODER

Recap



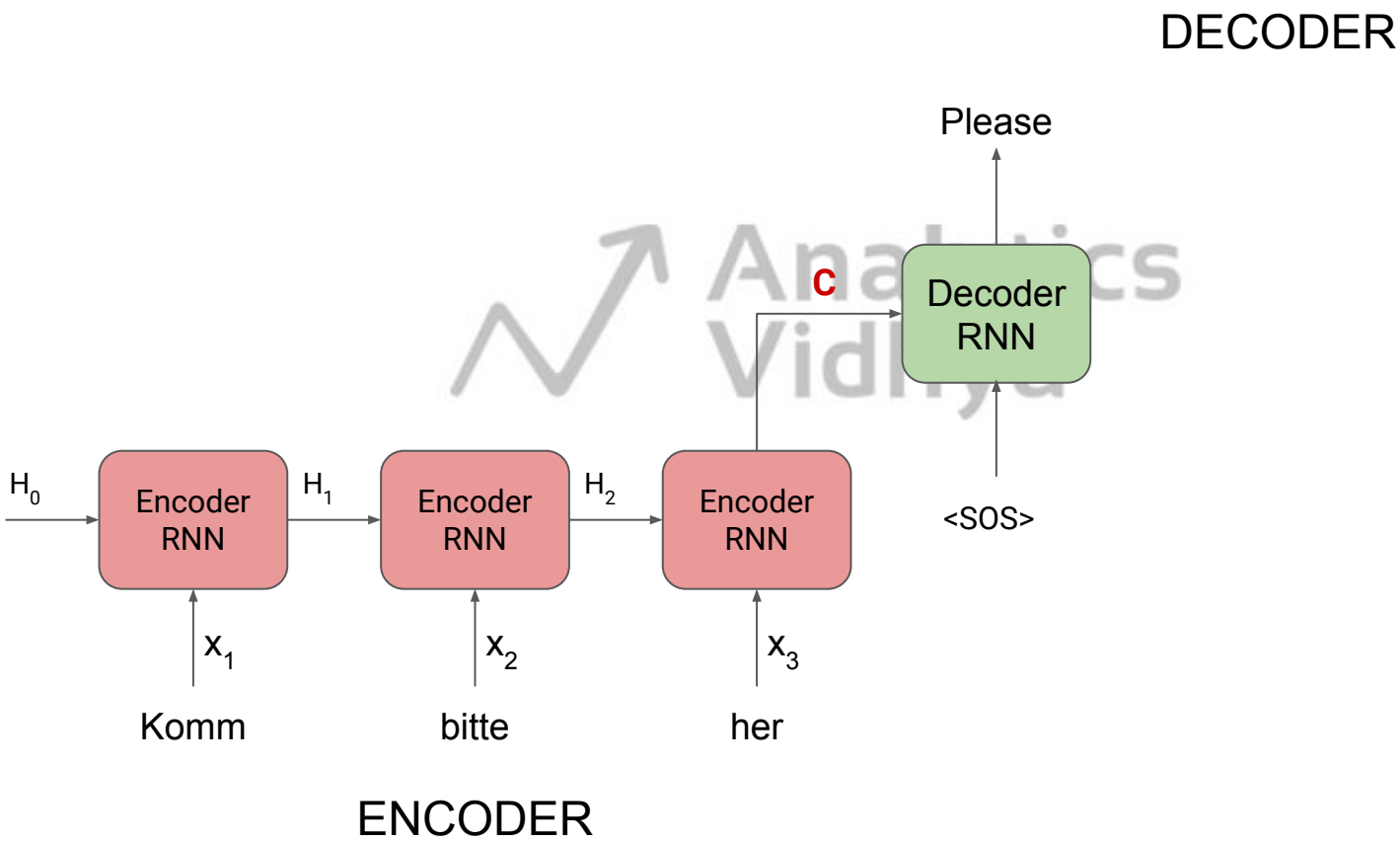
ENCODER

Recap



ENCODER

Recap



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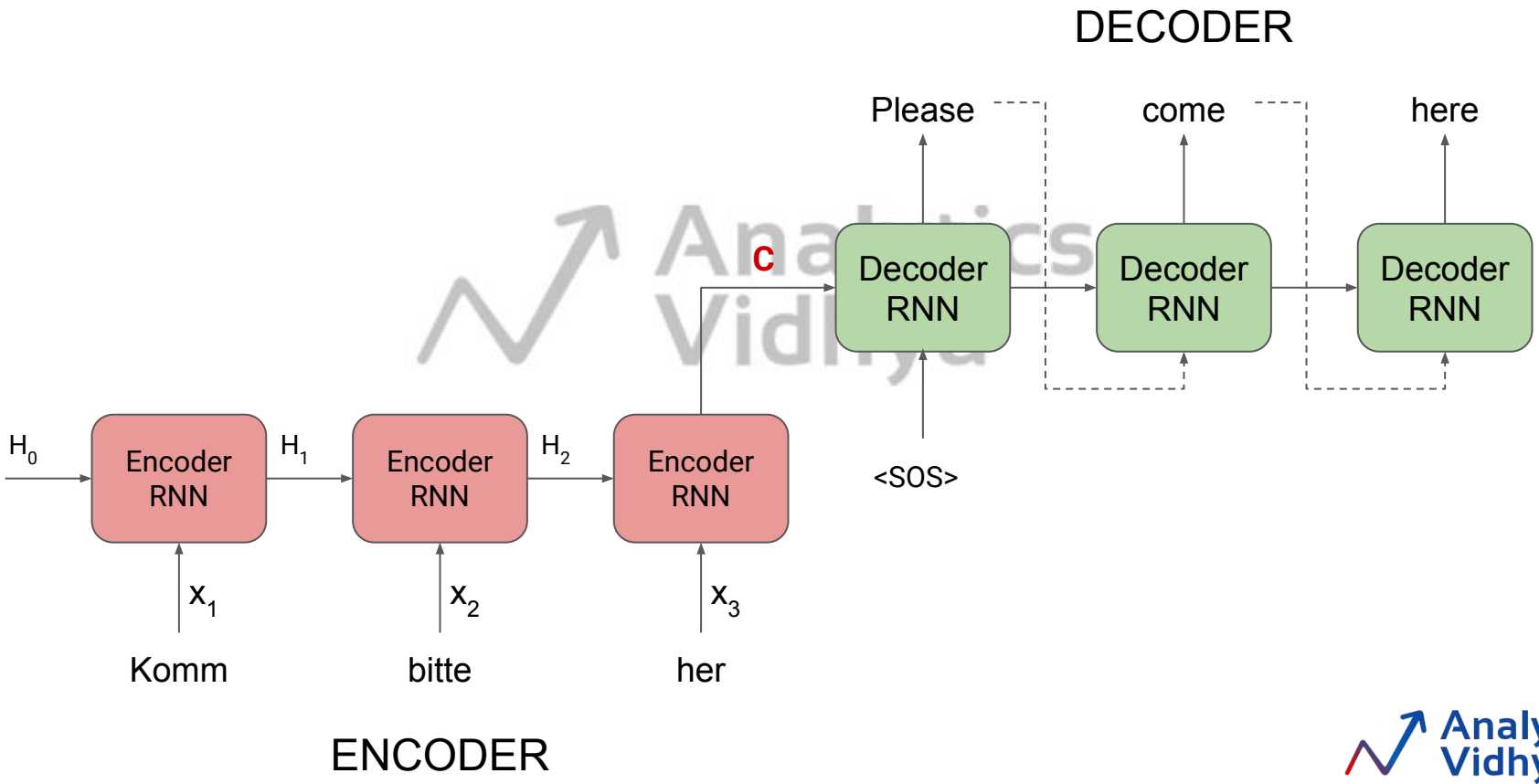
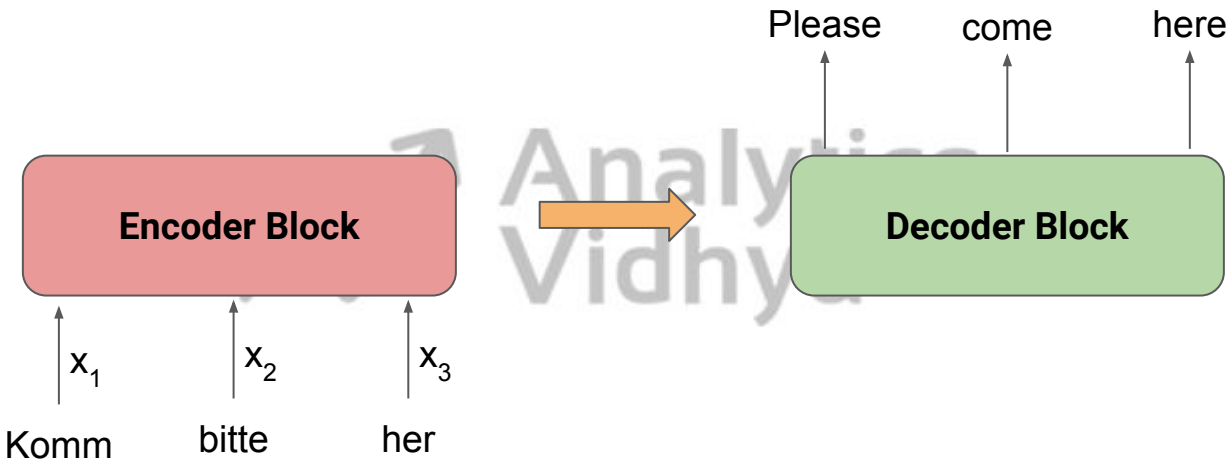
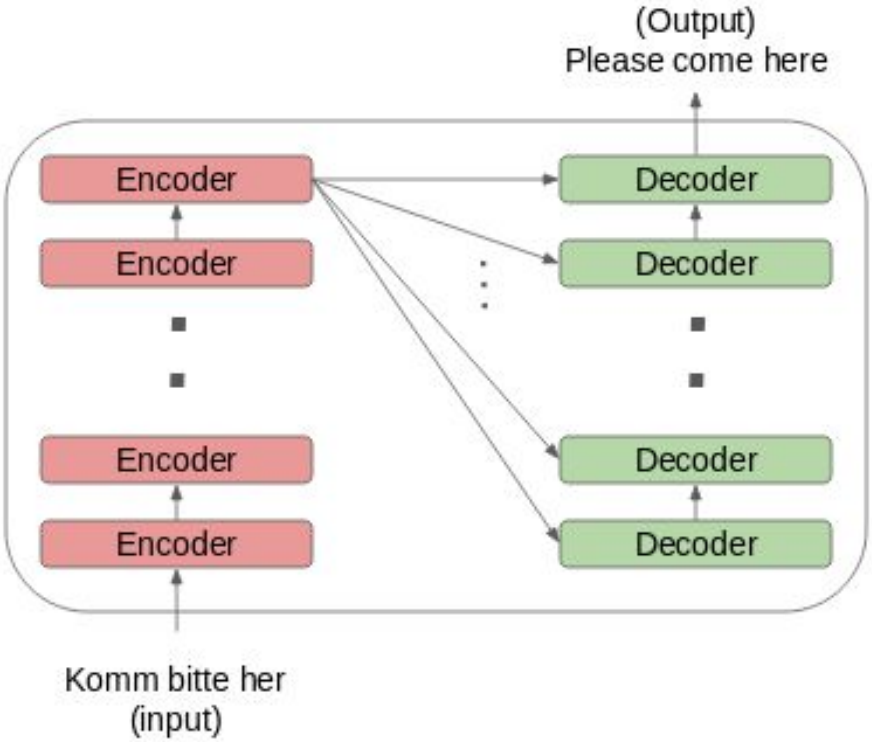


Transformer Architecture

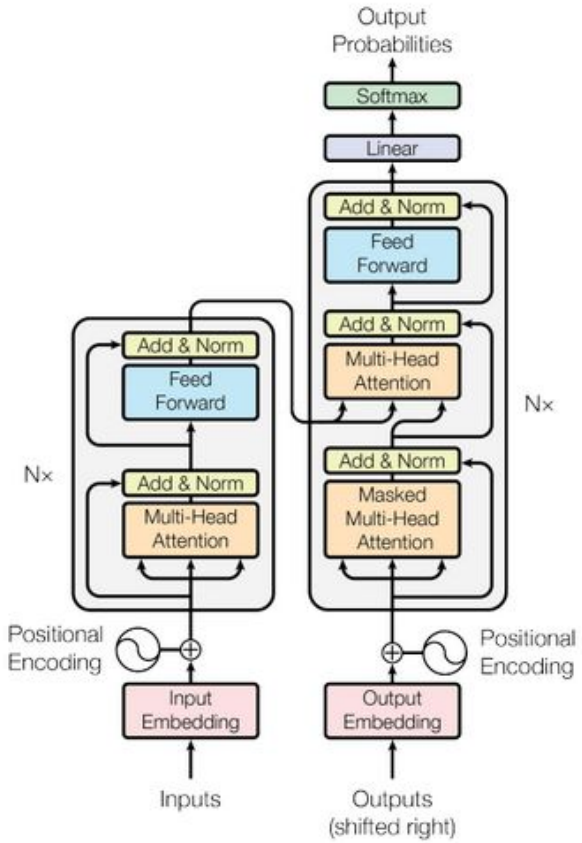


Transformer Architecture



Analytics Vidhya

Transformer Architecture



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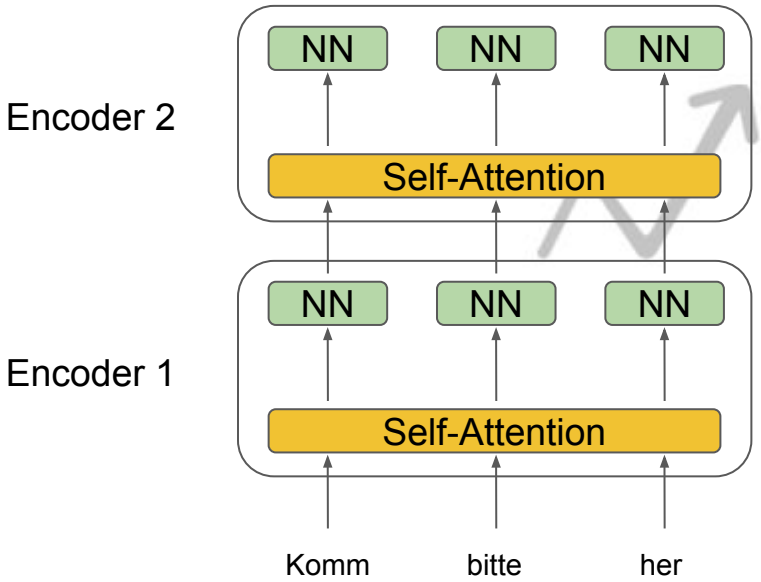
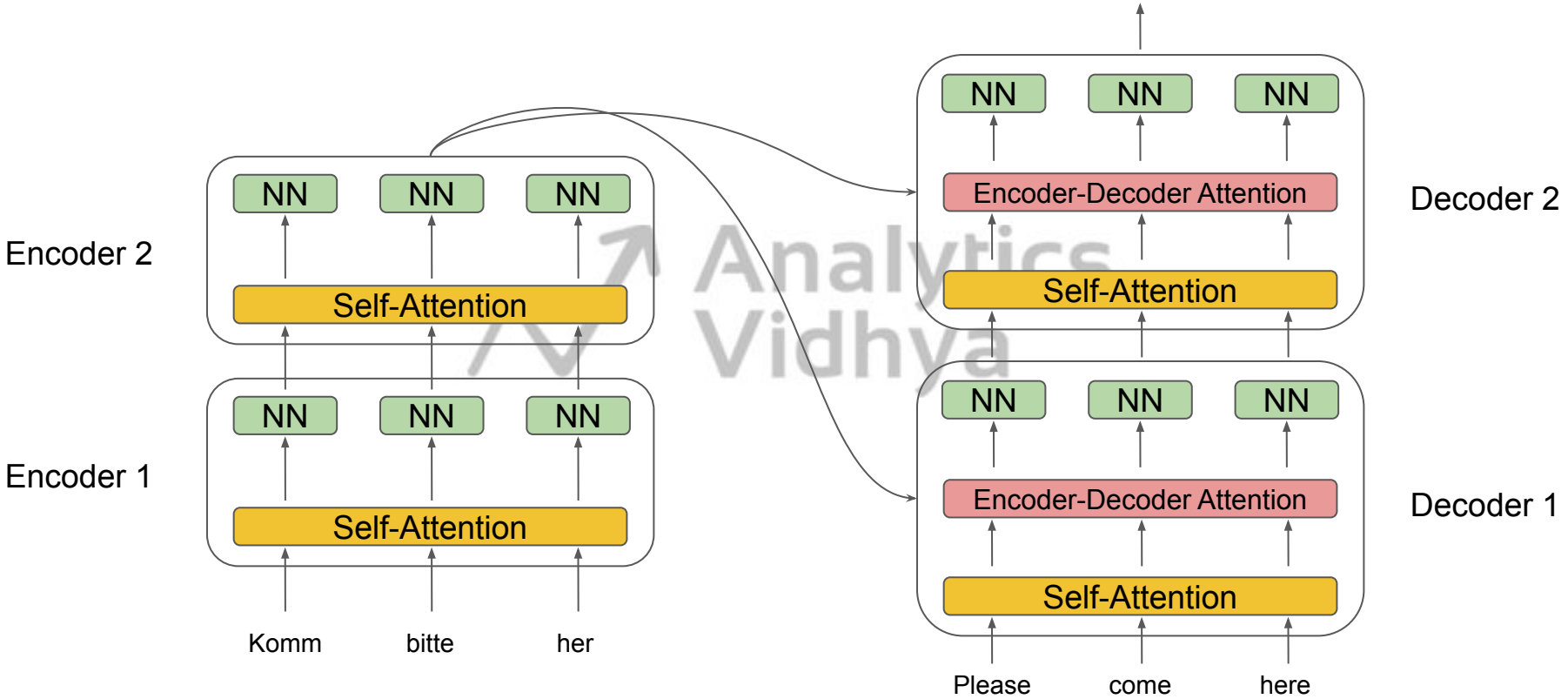
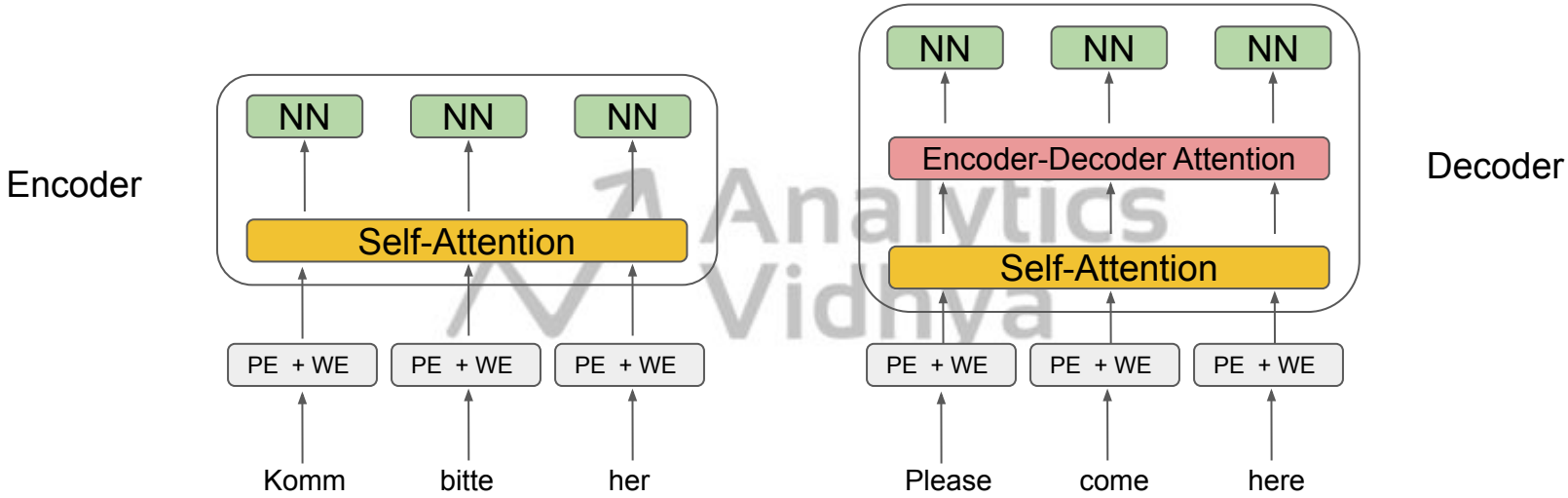
Encoder-Decoder in Transformer



Encoder-Decoder in Transformer



Positional Embeddings in Transformer

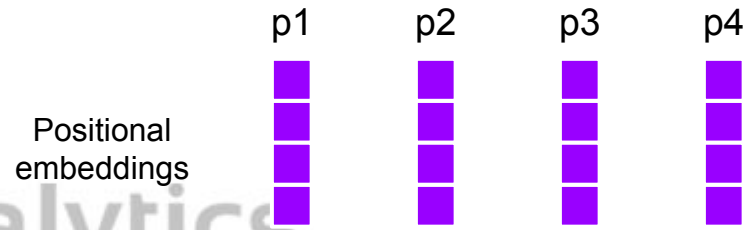


PE - Positional Embedding

WE - Word Embedding

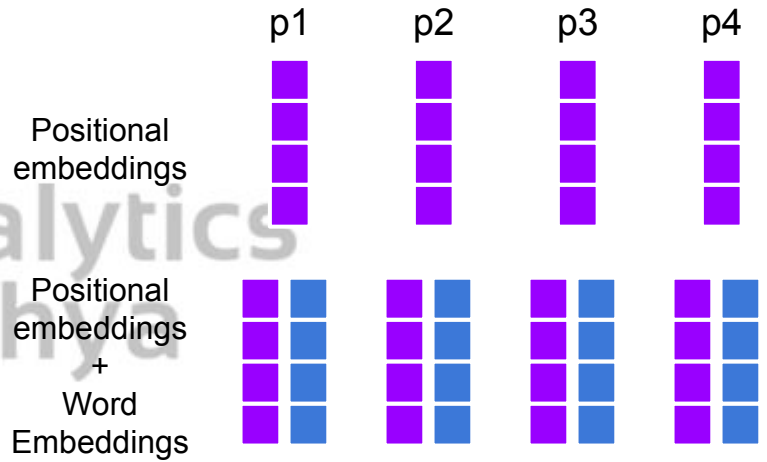
Positional Embeddings in Transformer

- Positional embeddings (PE) encode the order of tokens into fixed size vectors



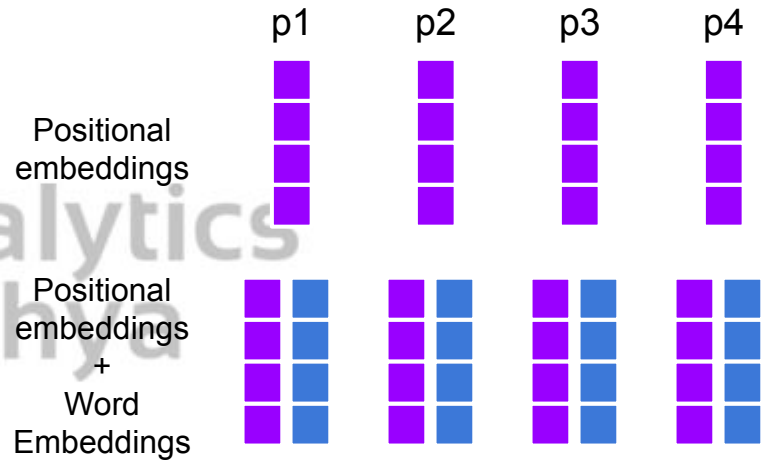
Positional Embeddings in Transformer

- Positional embeddings (PE) encode the order of tokens into fixed size vectors
- Combined with word embeddings and passed to encoder and decoder layers



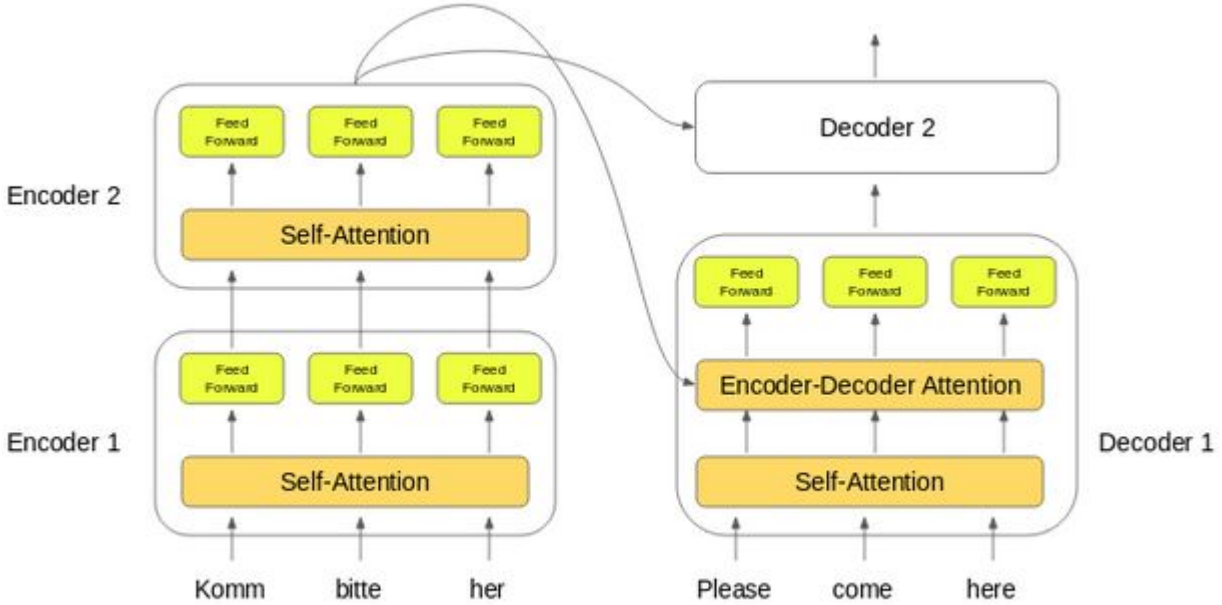
Positional Embeddings in Transformer

- Positional embeddings (PE) encode the order of tokens into fixed size vectors
- Combined with word embeddings and passed to encoder and decoder layers
- PE are generated by two functions



- $PE(p, 2i + 1) = \cos(p/10000^{2i / emb\_dim})$
- $PE(p, 2i) = \sin(p/10000^{2i / emb\_dim})$

Encoder-Decoder in Transformer



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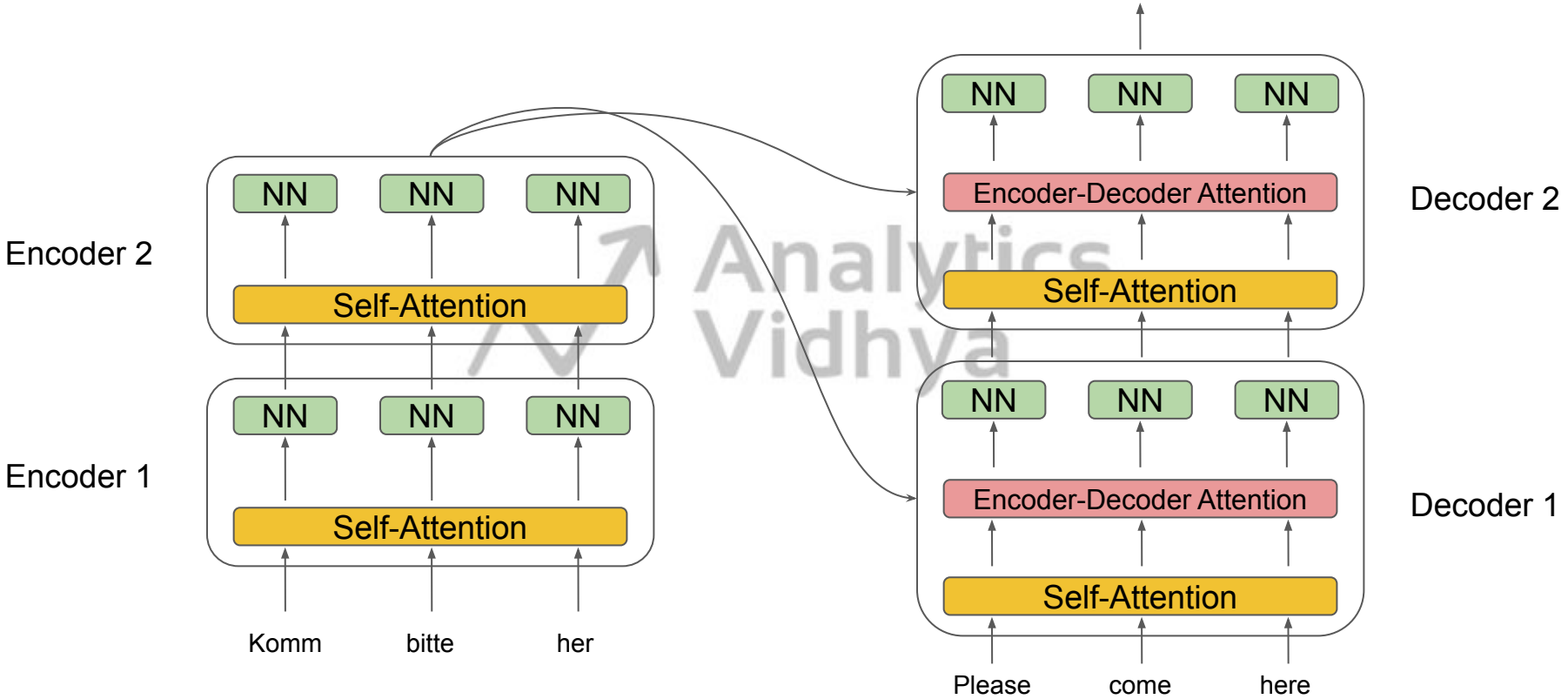
Encoder-Decoder in Transformer



Intuition behind Self Attention

“The kids were scared of the lions, so they left right away.”

Intuition behind Self Attention

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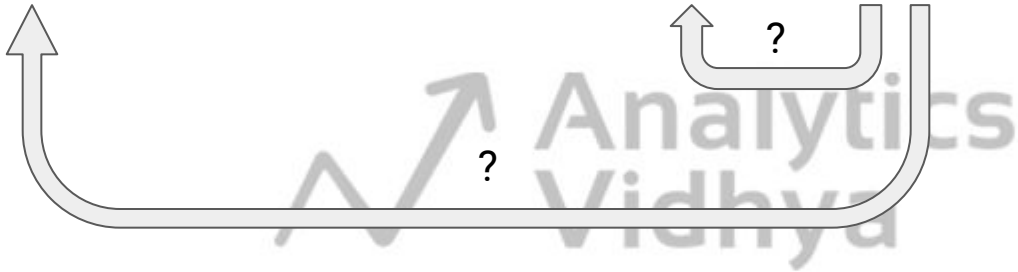

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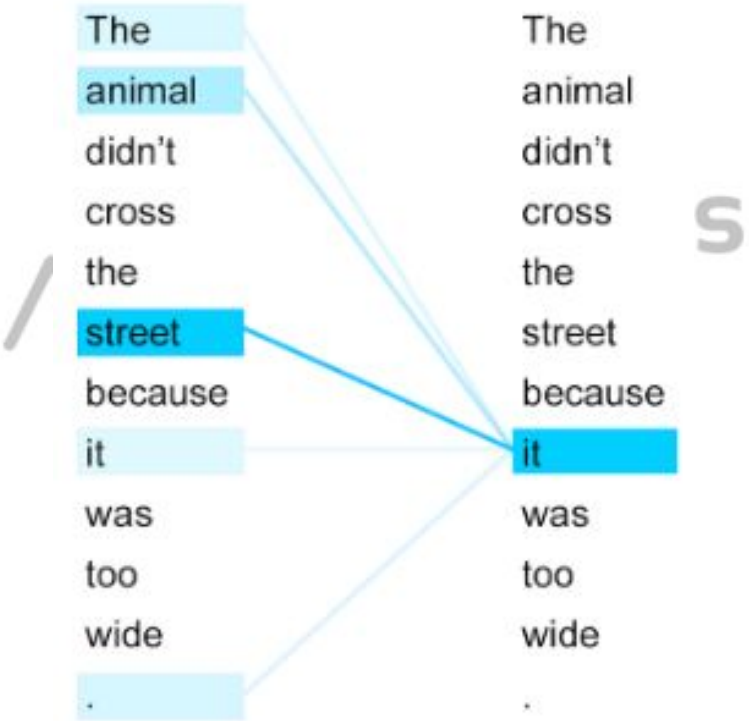
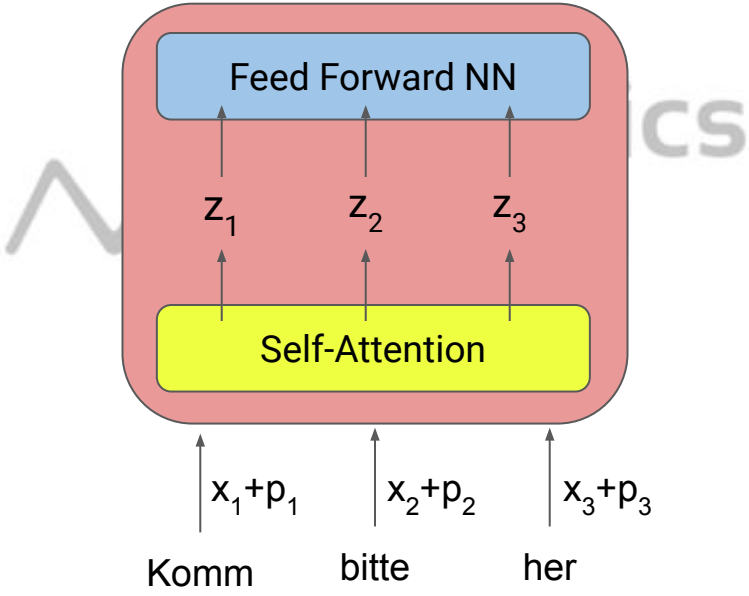
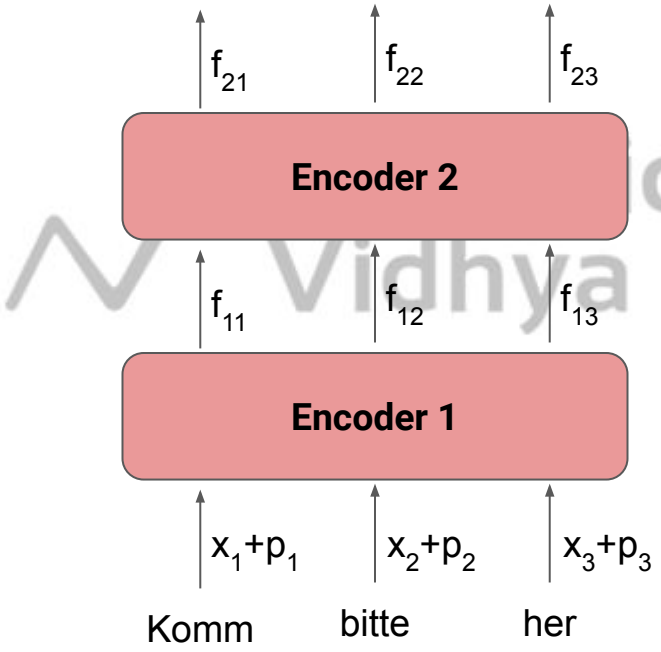
Intuition behind Self Attention



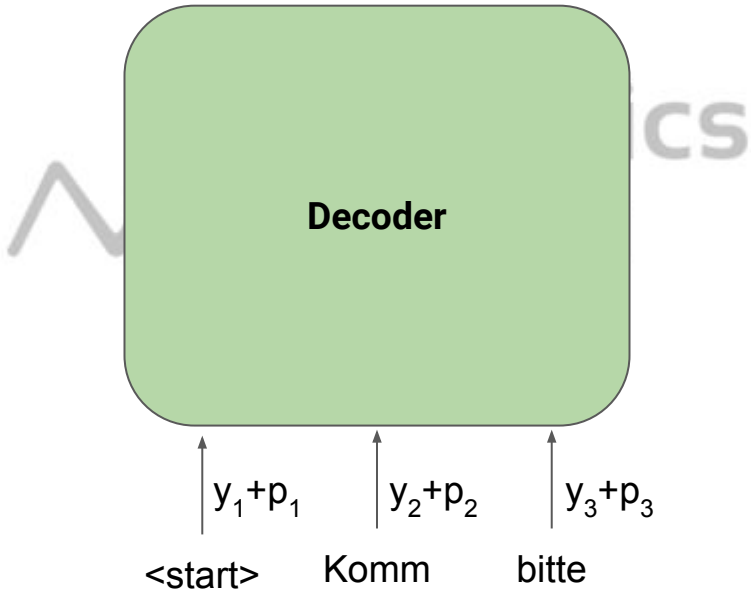
Encoder Layer in Transformer



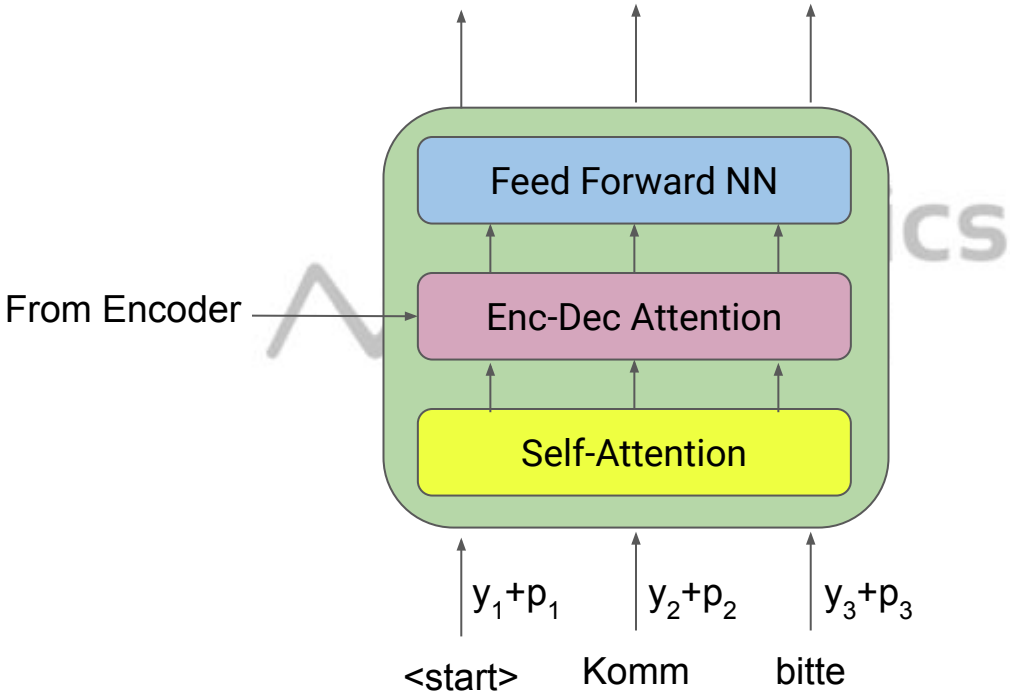
Encoder Layer in Transformer



Decoder Layer in Transformer



Decoder Layer in Transformer



Thank You

Analytics
Vidhya