Language AI

Let’s understand basics first!

[Artificial intelligence is] the science and engineering of making intelligent machines, especially intelligent computer programs. It is related to the similar task of using computers to understand human intelligence, but AI does not have to confine itself to methods that are biologically observable.

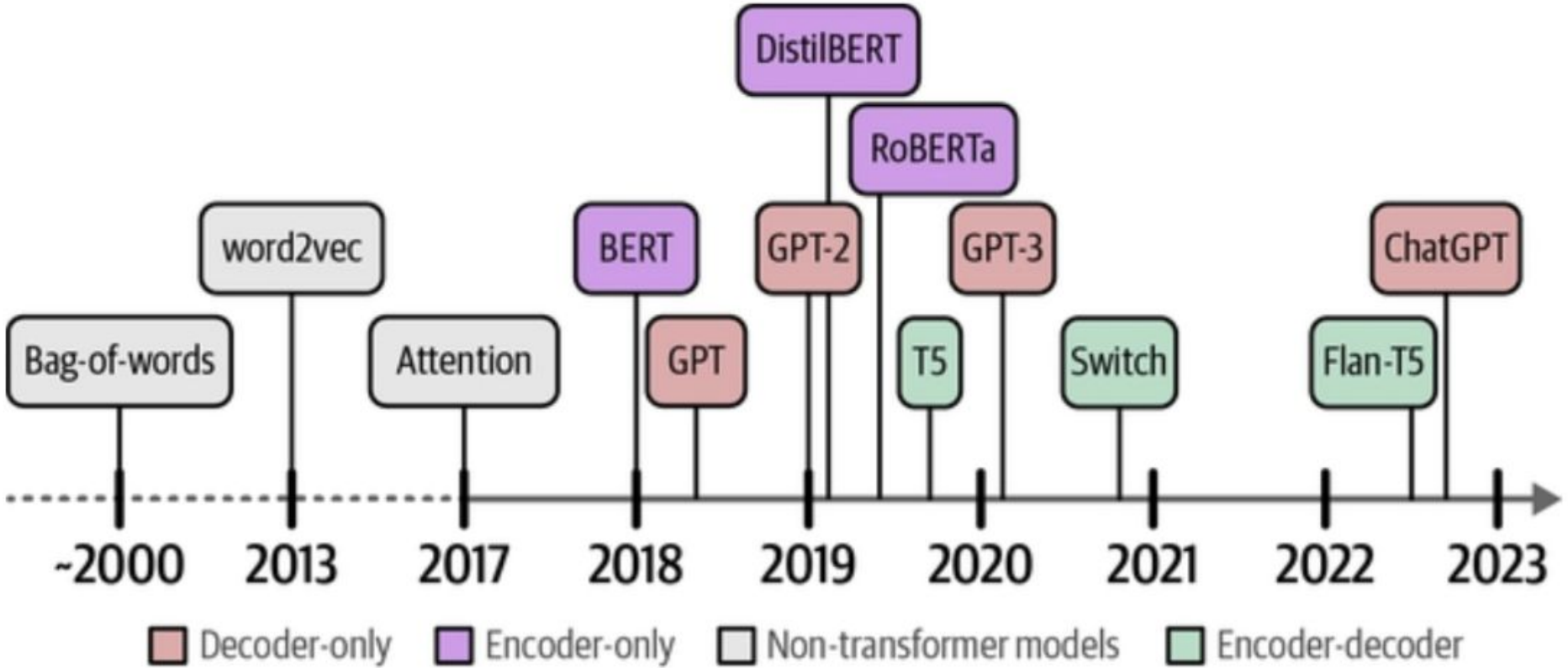
—John McCarthy, 2007[1]

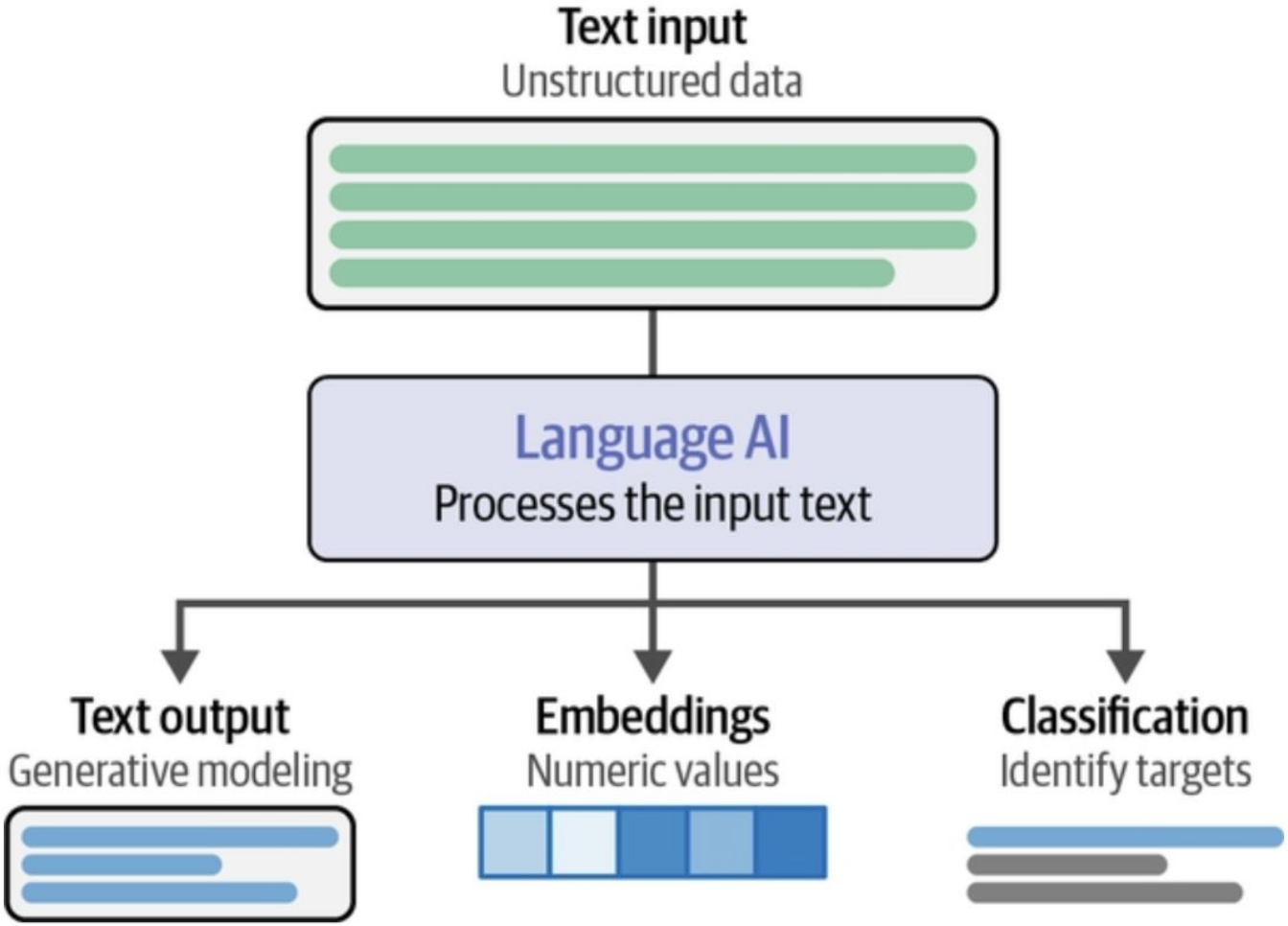
Language AI

Language AI refers to a subfield of AI that focuses on developing technologies capable of understanding, processing, and generating human language.

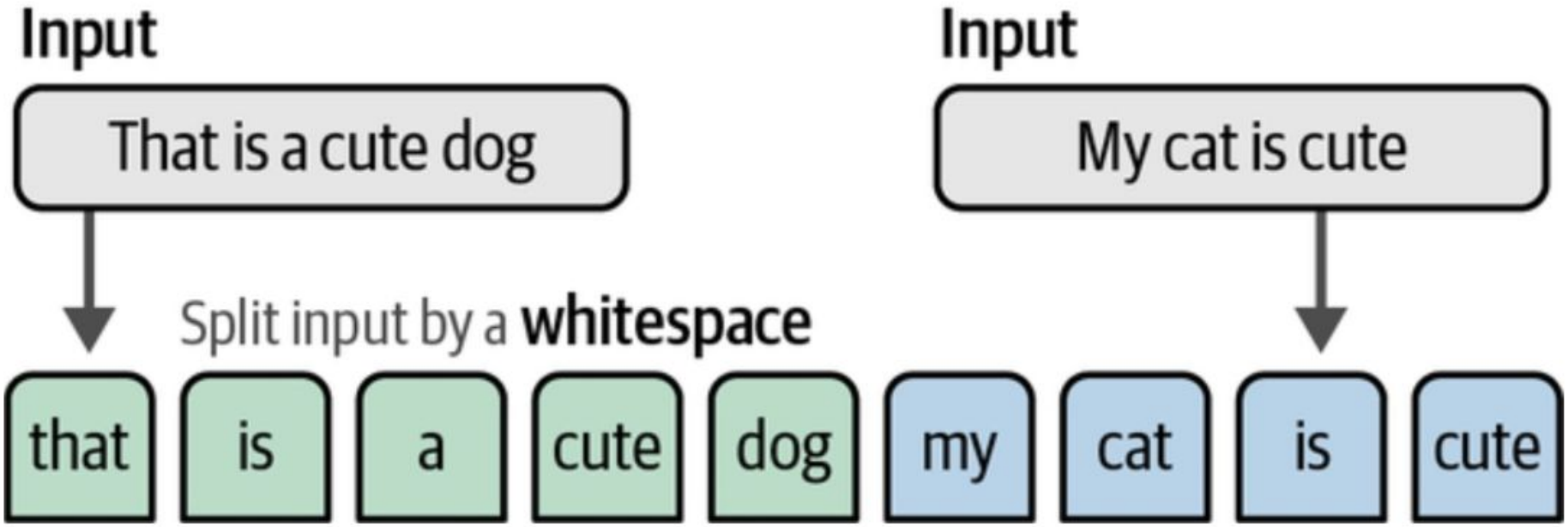
The term Language AI can often be used interchangeably with natural language processing (NLP) with the continued success of machine learning methods in tackling language processing problems.

Recent History of Language AI

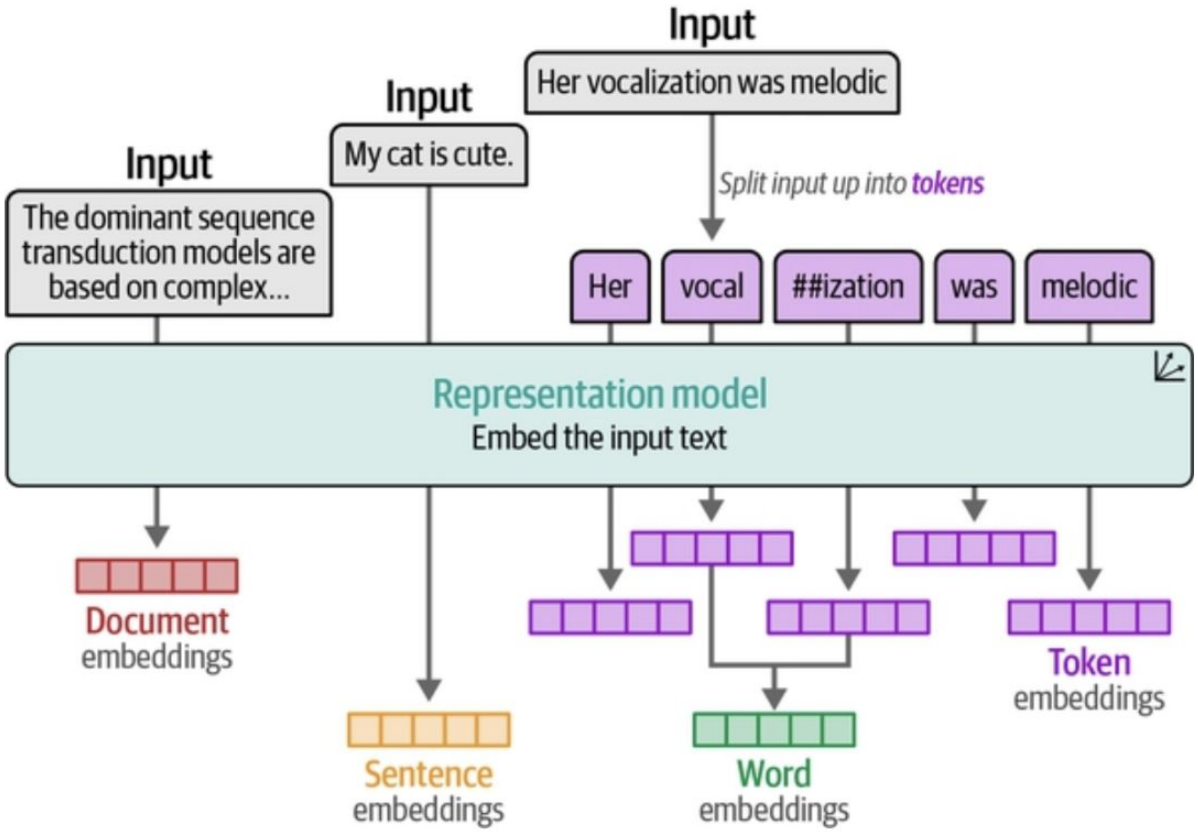



Text input
Unstructured data
Language AI
Processes the input text
Text output
Generative modeling
Embeddings
Numeric values
Classification
Identify targets

Tokenization



Types of Embeddings



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A survey on word embedding techniques and semantic similarity for paraphrase identification

Divesh R. Kubal and Anant V. Nimkar

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Abstract

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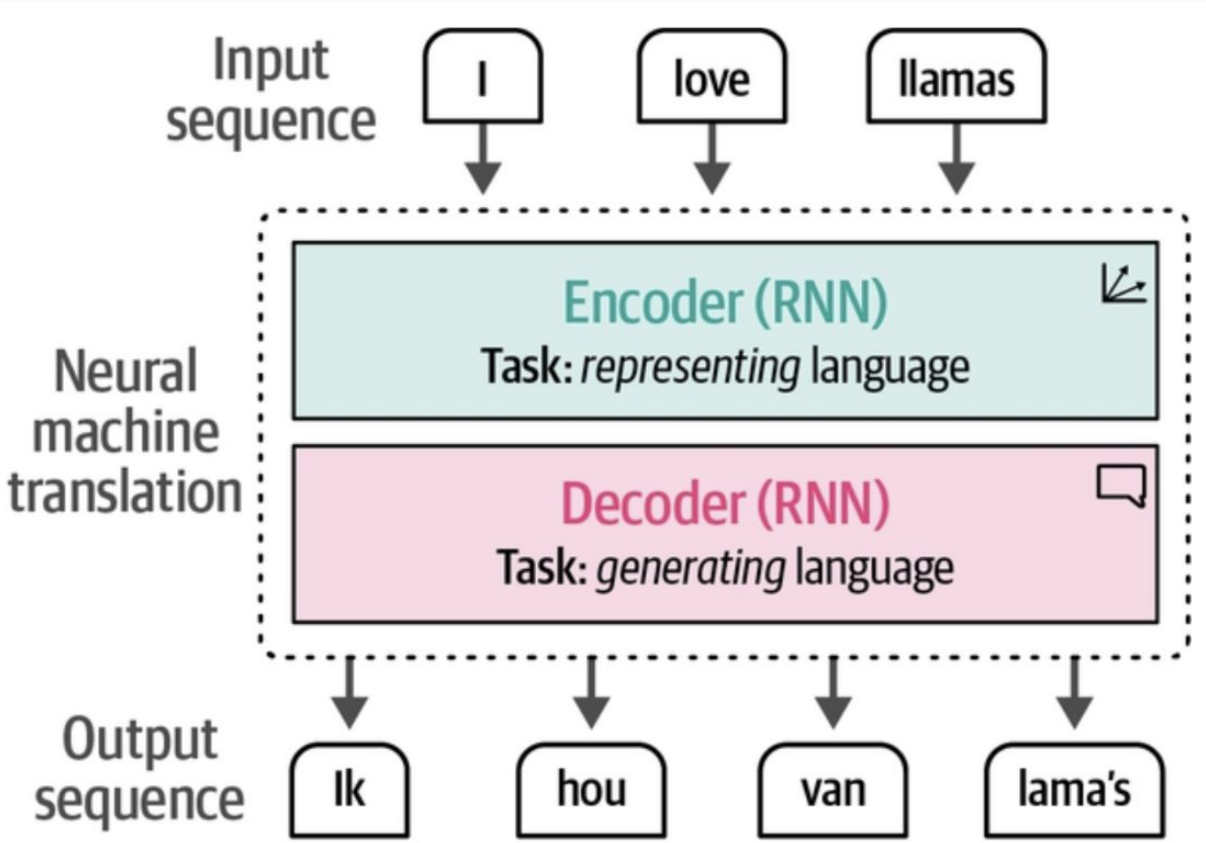
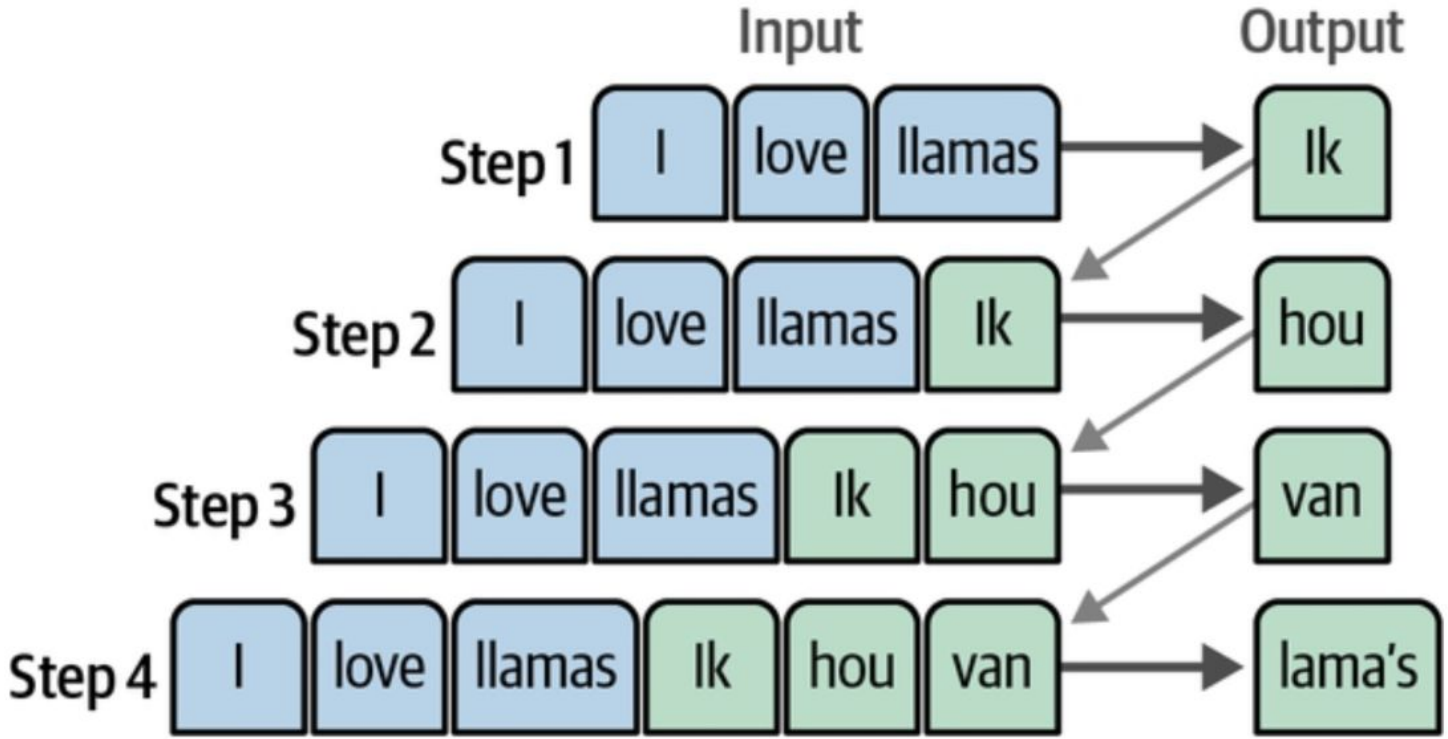
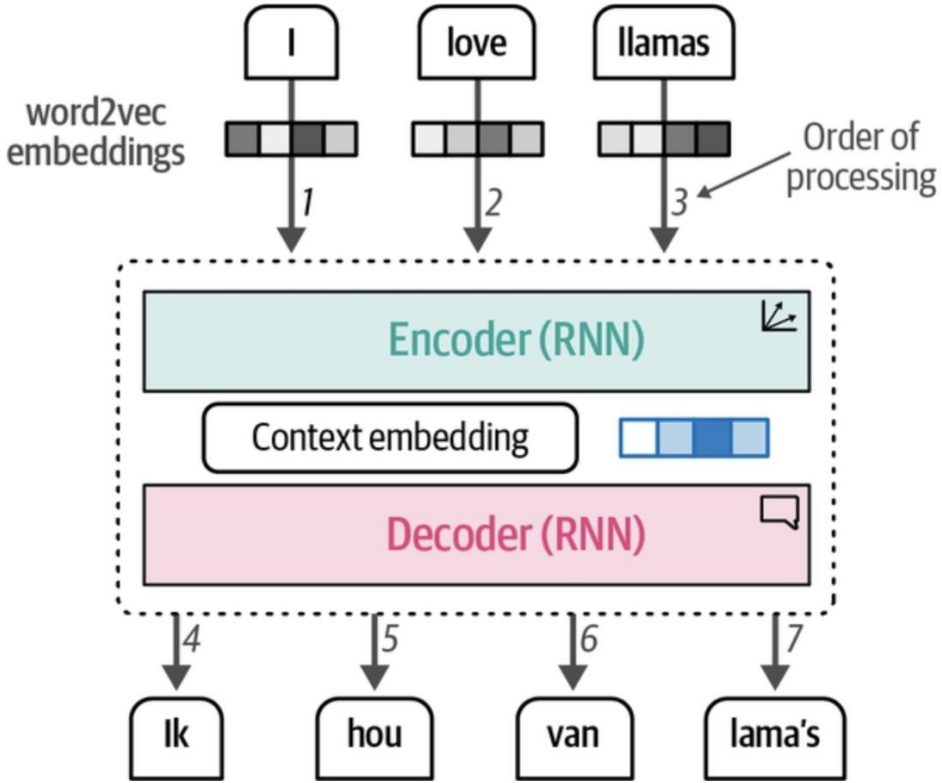
Encoding and Decoding with Attention



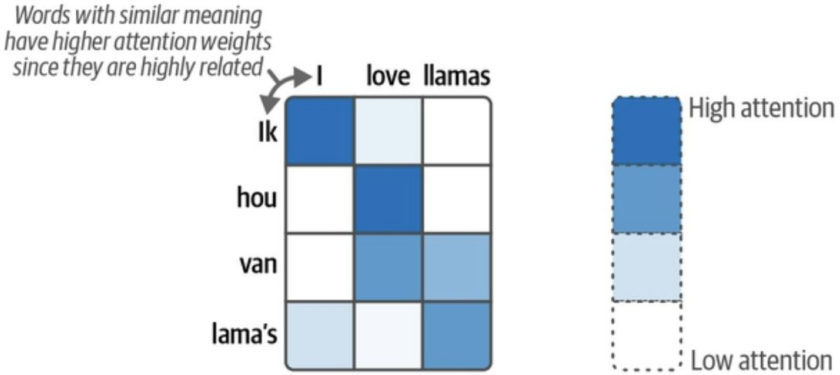
Autoregressive?

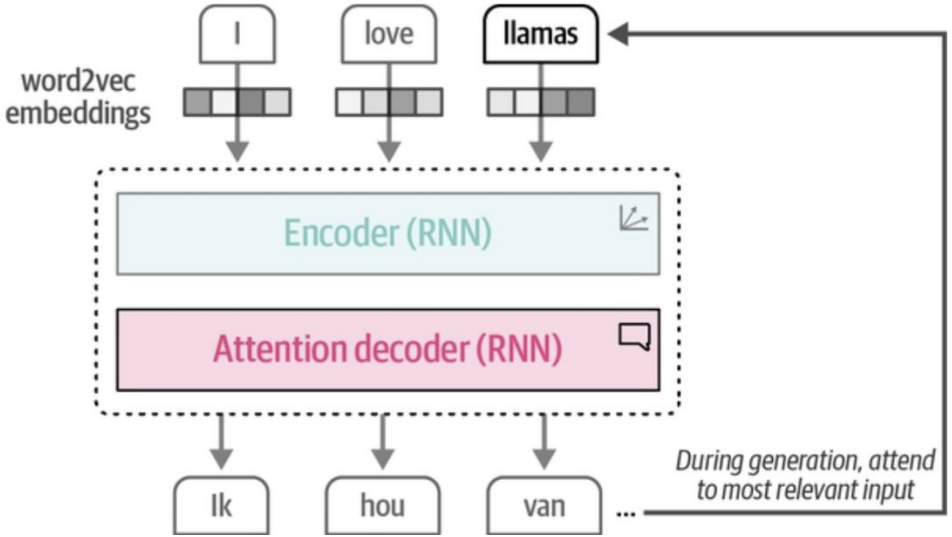


Context Embedding?

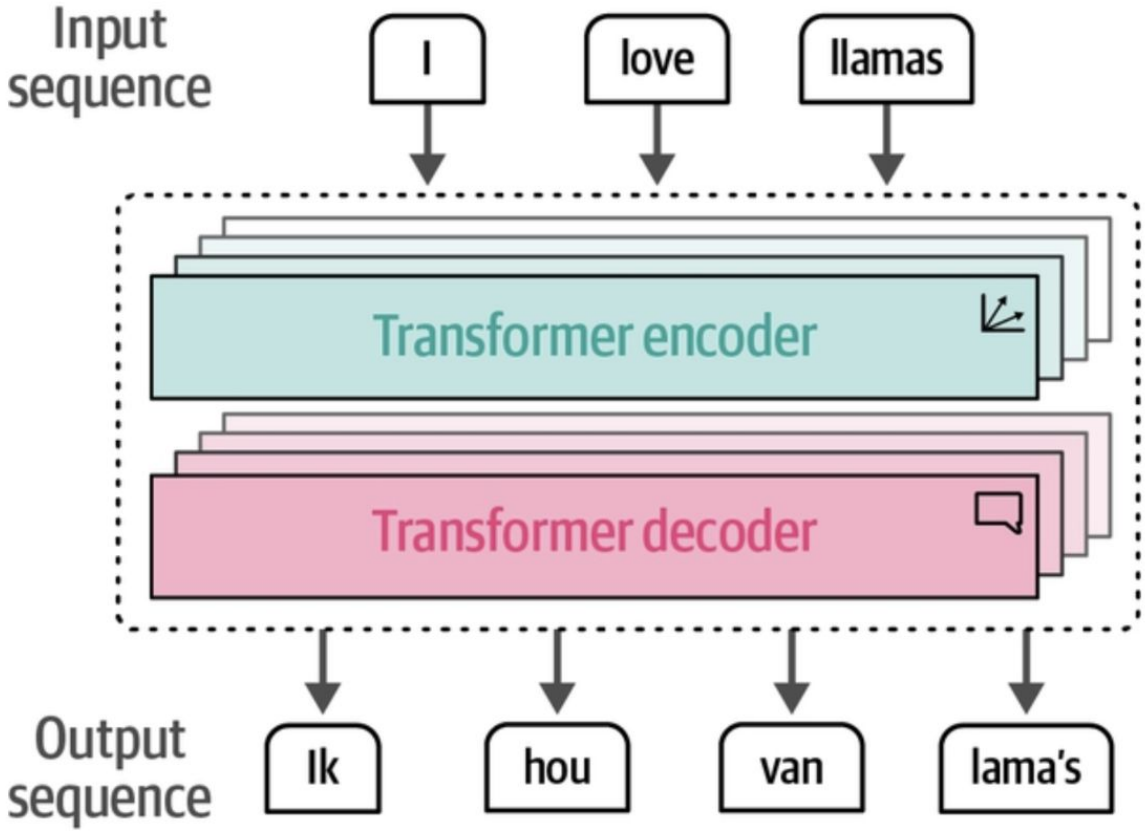


Attention is ALL YOU NEED

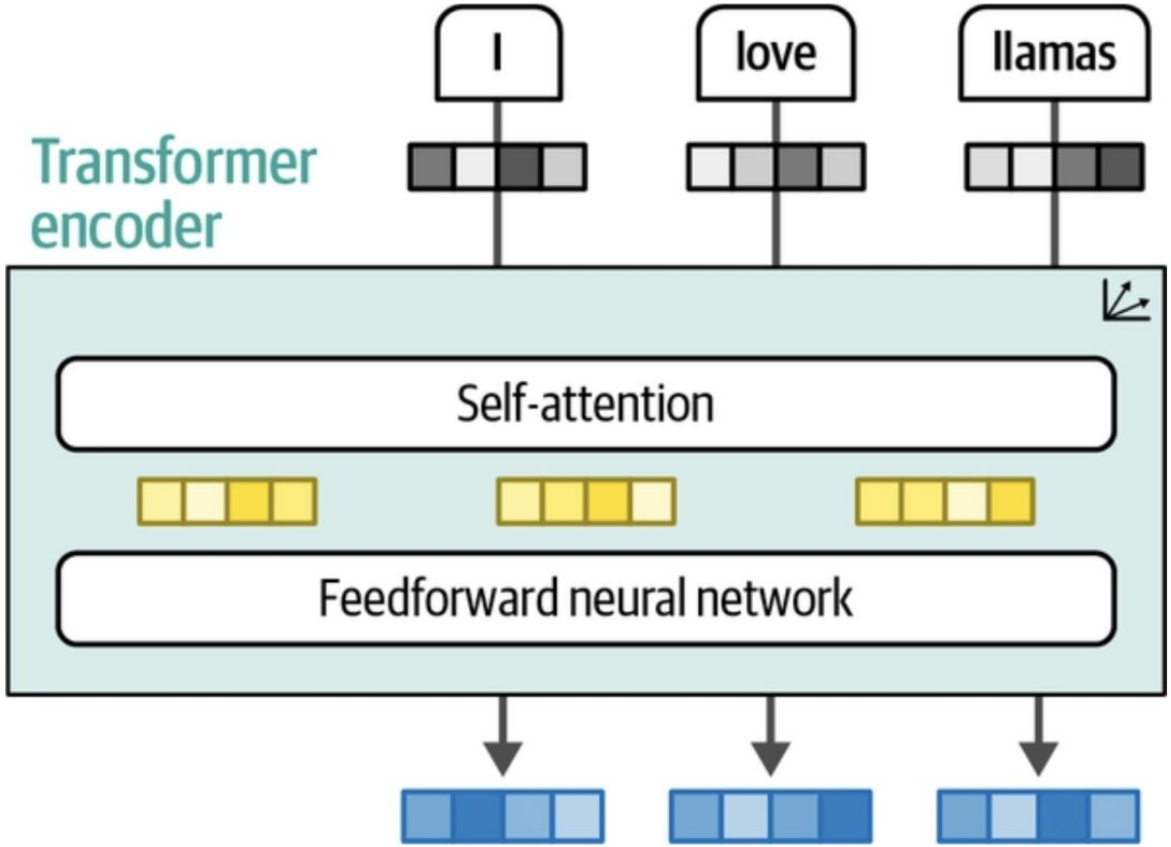




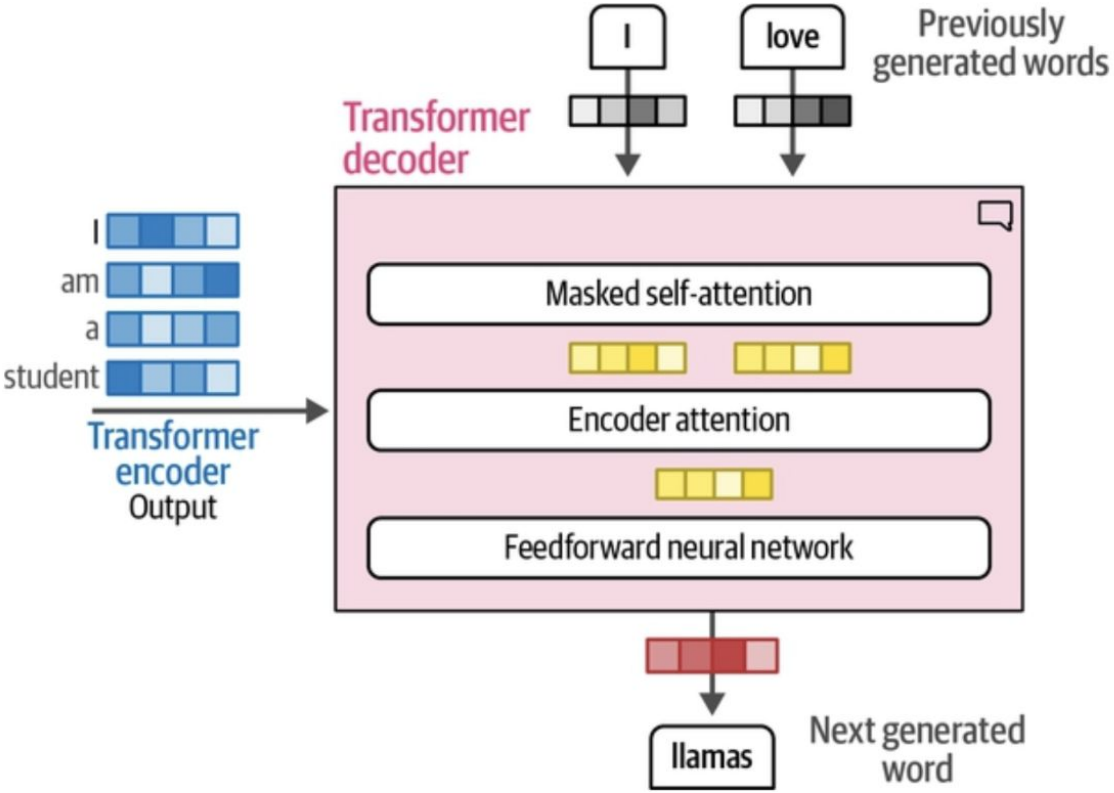
The Transformer Architecture

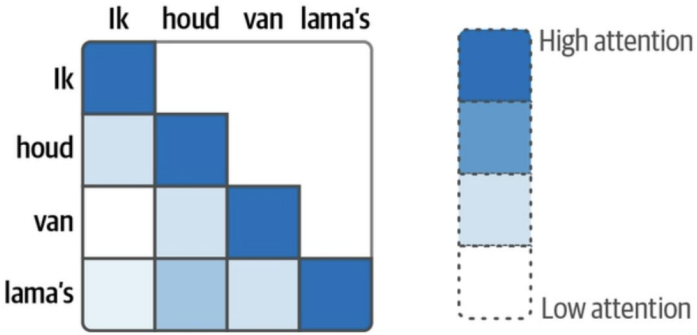


Encoder Part

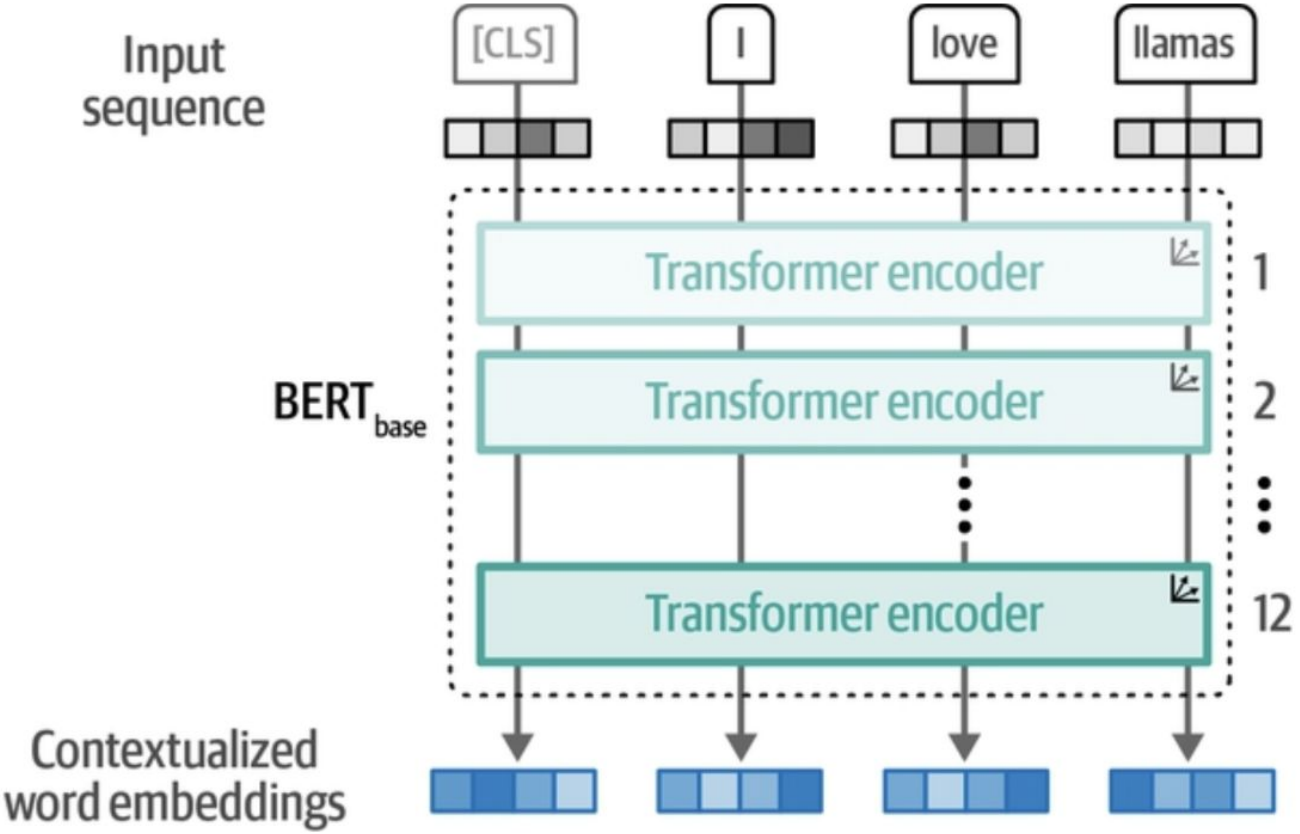


Decoder Part





Encoder-Only Models (Representation Models)



Decoder-Only Models (Generative Models)