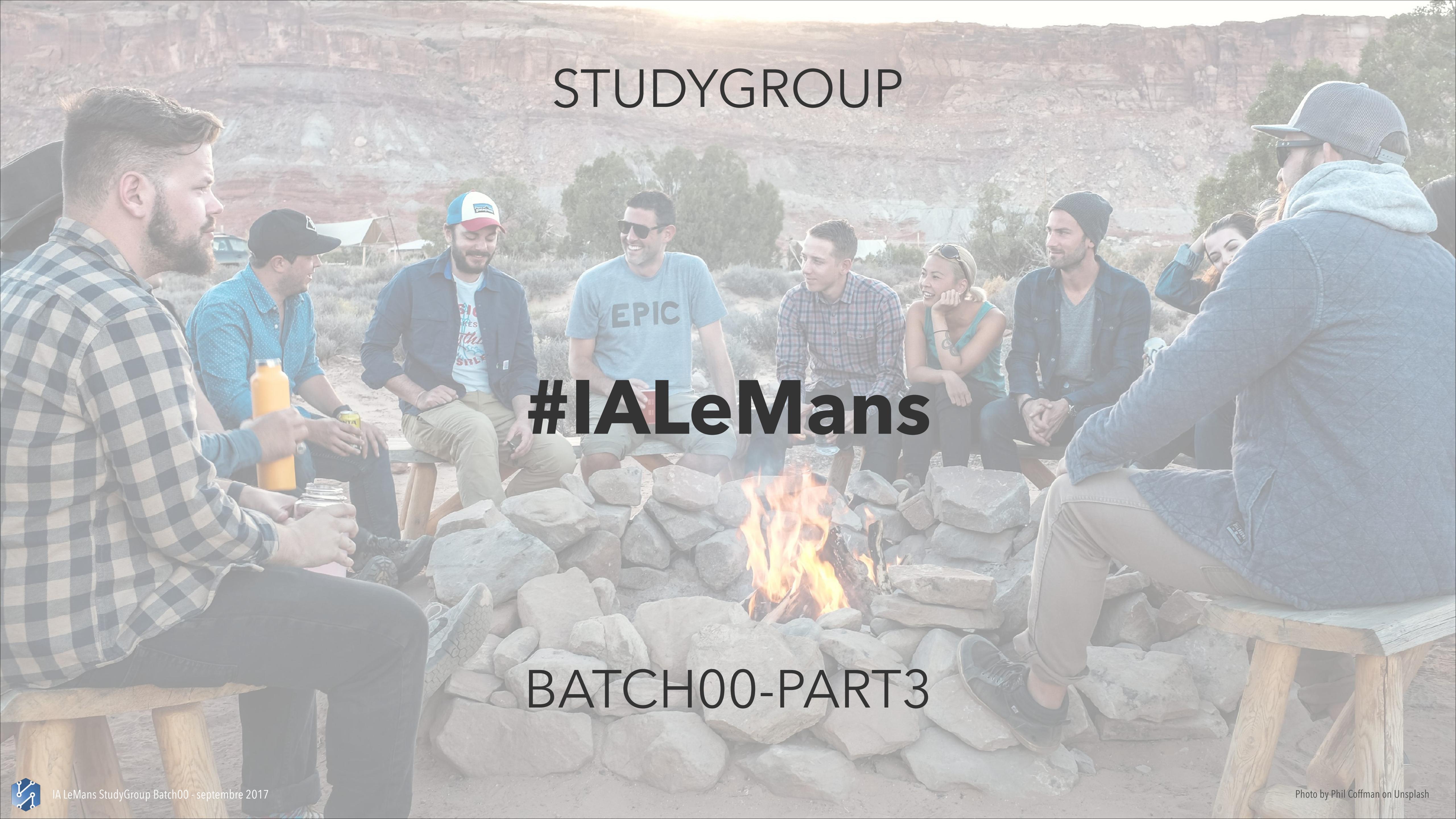




IA LEMANS STUDYGROUP

Batch 00



A photograph of a group of approximately ten people sitting around a campfire in a desert or canyon area. The people are dressed casually, some wearing hats and sunglasses. They are holding various items like cans and a water bottle. The campfire is built in a circle of rocks. In the background, there are red rock formations and some green trees. The overall atmosphere is relaxed and social.

STUDYGROUP

#IALeMans

BATCH00-PART3



# #REMERCIEMENTS

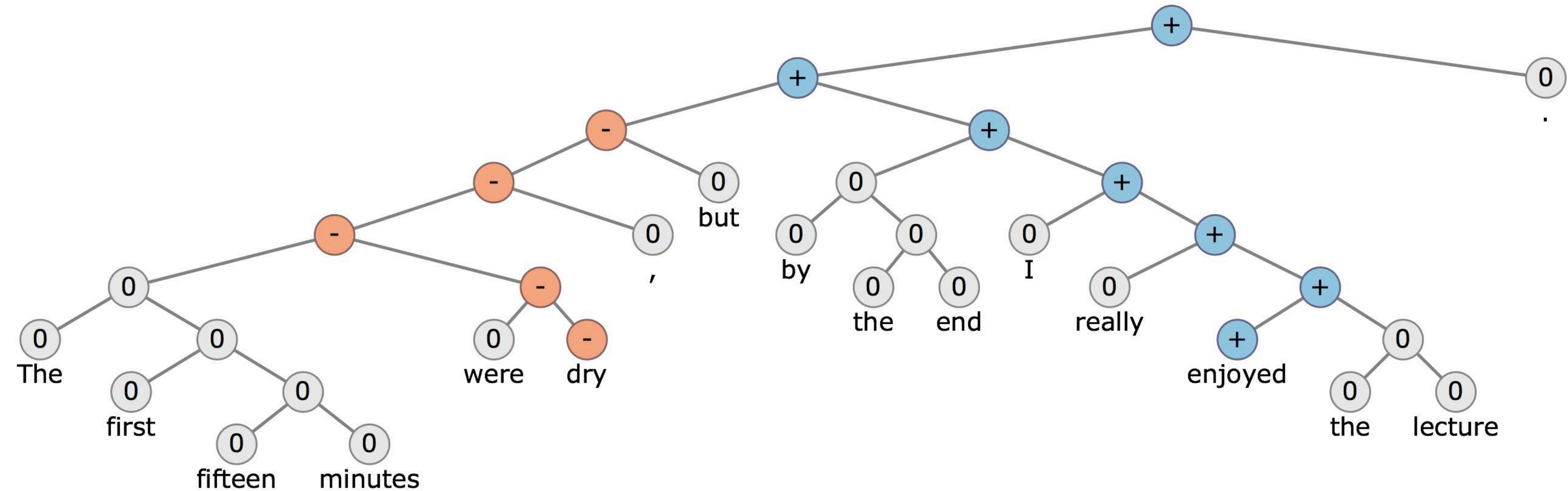




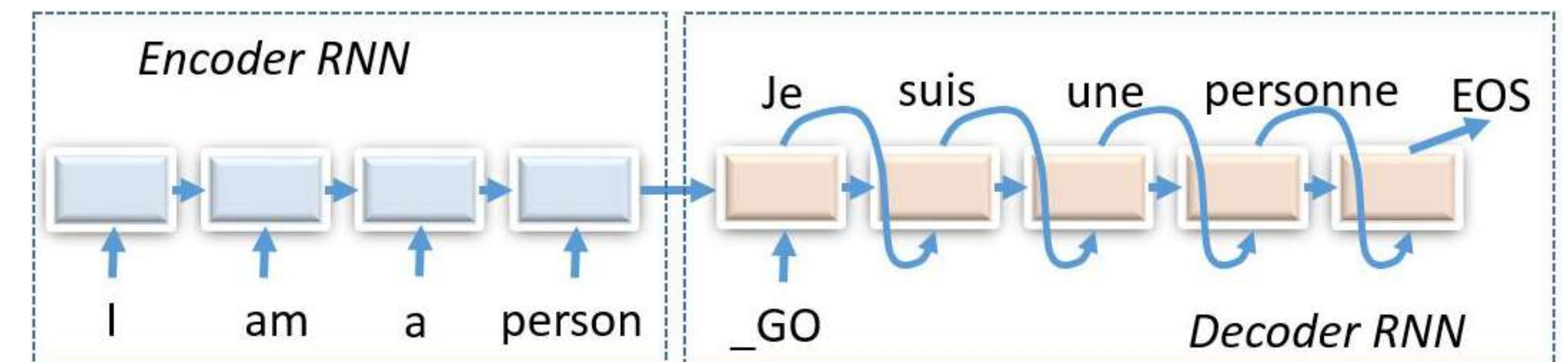
# NLP | Traitement en Langage Naturel



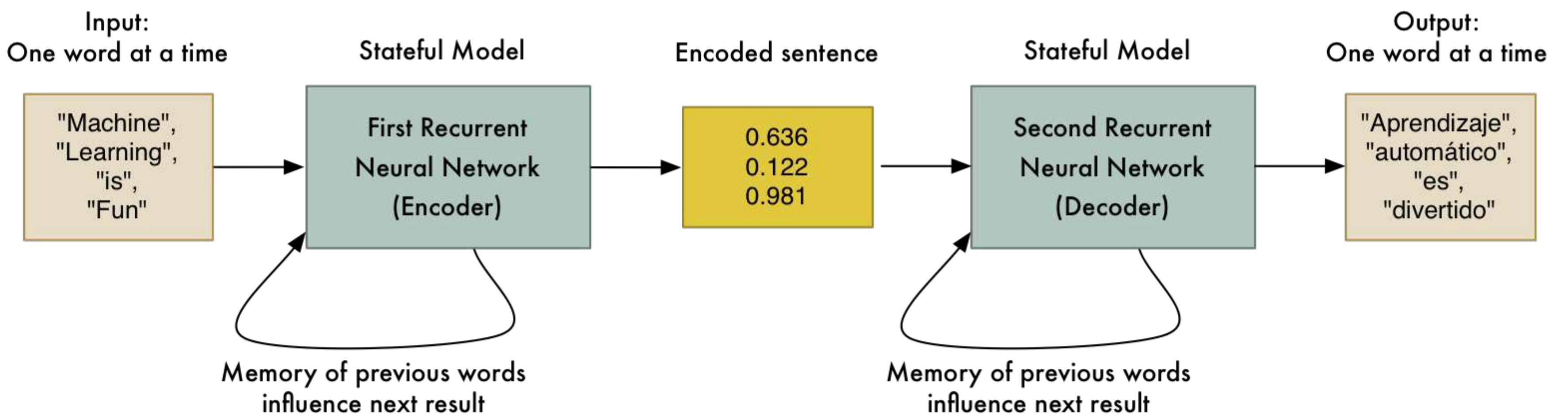
# ANALYSE DE SENTIMENTS



# TRADUCTIONS



<https://github.com/guillaume-chevalier/seq2seq-signal-prediction>



<https://medium.com/@ageitgey/machine-learning-is-fun-part-5-language-translation-with-deep-learning-and-the-magic-of-sequences-2ace0acca0aa>

# EXTRACTION D'INFORMATIONS

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In 1917, Einstein applied the general theory of relativity to model the large-scale structure of the universe. He was visiting the United States when Adolf Hitler came to power in 1933 and did not go back to Germany, where he had been a professor at the Berlin Academy of Sciences. He settled in the U.S., becoming an American citizen in 1940. On the eve of World War II, he endorsed a letter to President Franklin D. Roosevelt alerting him to the potential development of "extremely powerful bombs of a new type" and recommending that the U.S. begin similar research. This eventually led to what would become the Manhattan Project. Einstein supported defending the Allied forces, but largely denounced using the new discovery of nuclear fission as a weapon. Later, with the British philosopher Bertrand Russell, Einstein signed the Russell-Einstein Manifesto, which highlighted the danger of nuclear weapons. Einstein was affiliated with the Institute for Advanced Study in Princeton, New Jersey, until his death in 1955.

Tag colours:

LOCATION TIME PERSON ORGANIZATION MONEY PERCENT DATE

# RÉSUMÉS

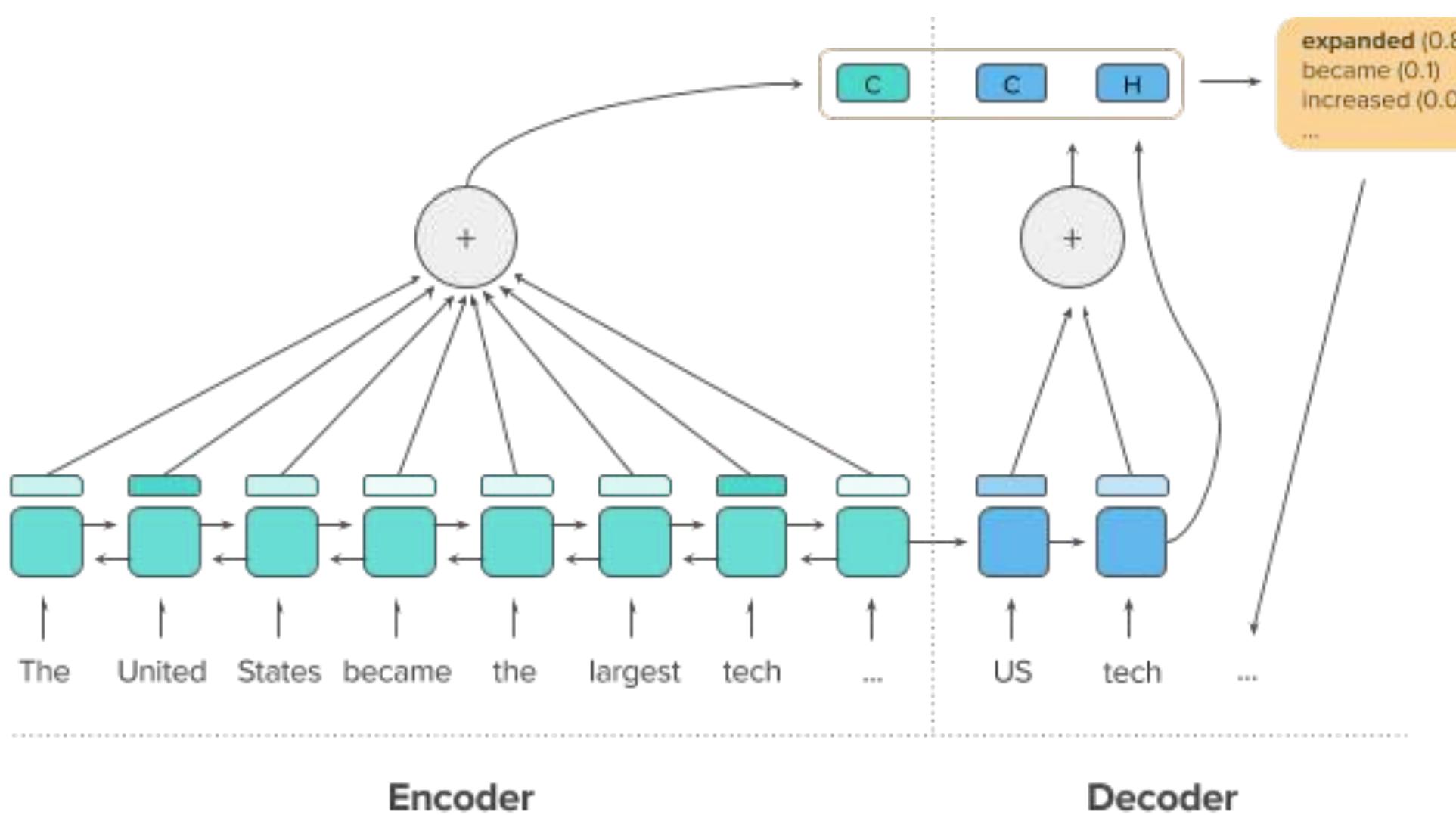


The bottleneck is no longer access to information; now it's our ability to keep up.

AI can be trained on a variety of different types of texts and summary lengths.

A model that can generate long, coherent, and meaningful summaries remains an open research problem.

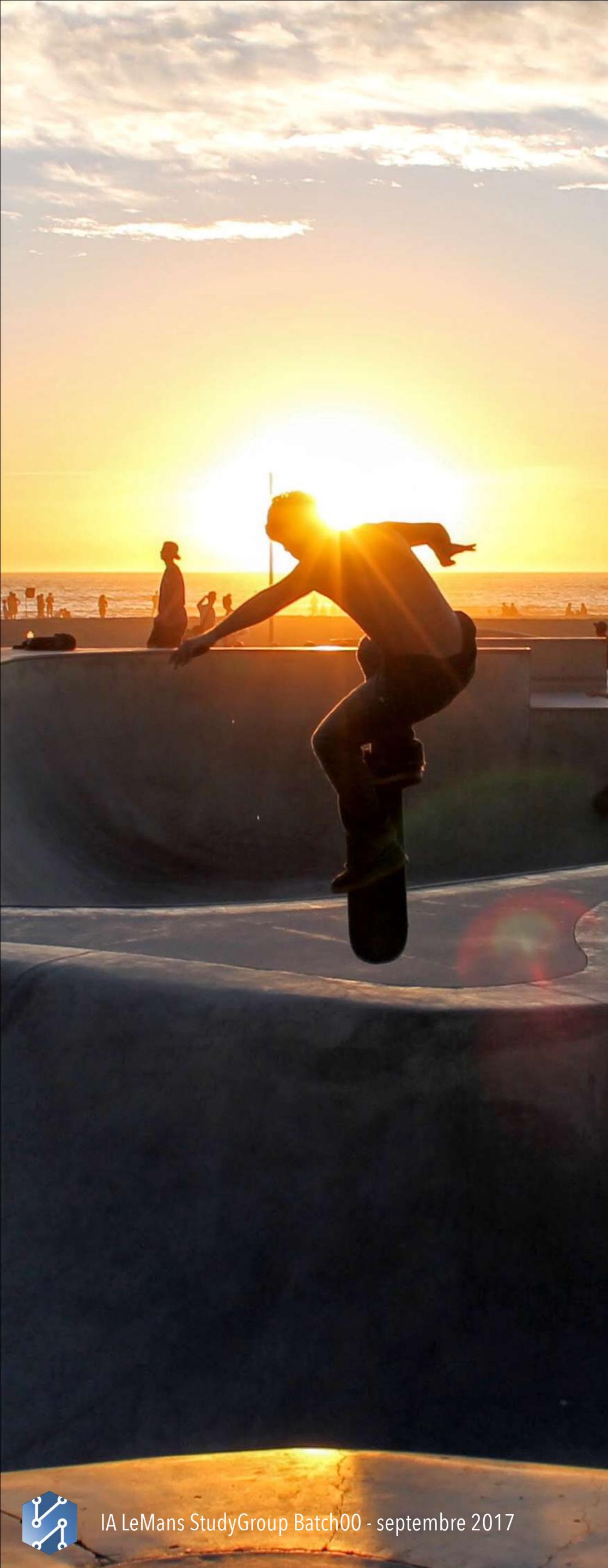
The last few decades have witnessed a fundamental change in the challenge of taking in new information. The bottleneck is no longer access to information; now it's our ability to keep up. We all have to read more and more to keep up-to-date with our jobs, the news, and social media. We've looked at how AI can improve people's work by helping with this information deluge and one potential answer is to have algorithms automatically summarize longer texts. Training a model that can generate long, coherent, and meaningful summaries remains an open research problem. In fact, generating any kind of longer text is hard for even the most advanced deep learning algorithms. In order to make summarization successful, we introduce two separate improvements: a more contextual word generation model and a new way of training summarization models via reinforcement learning (RL). The combination of the two training methods enables the system to create relevant and highly readable multi-sentence summaries of long text, such as news articles, significantly improving on previous results. Our algorithm can be trained on a variety of different types of texts and summary lengths. In this blog post, we present the main contributions of our model and an overview of the natural language challenges specific to text summarization.



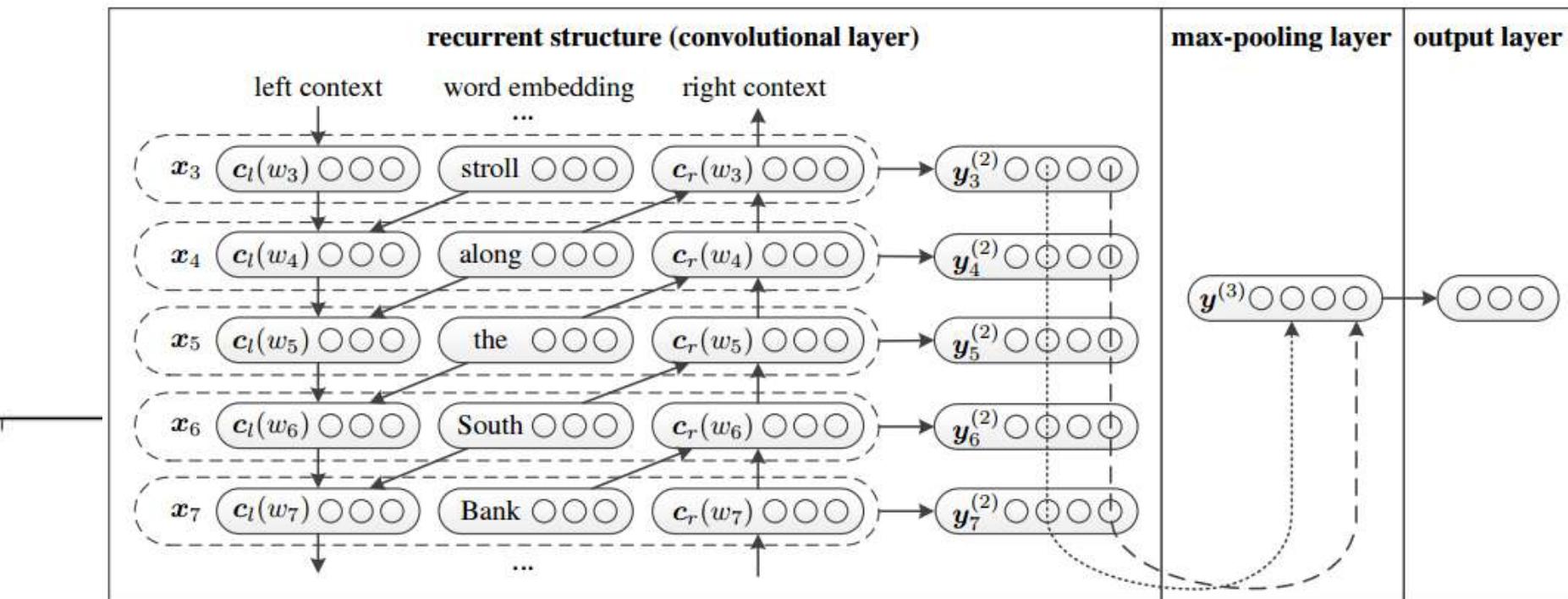
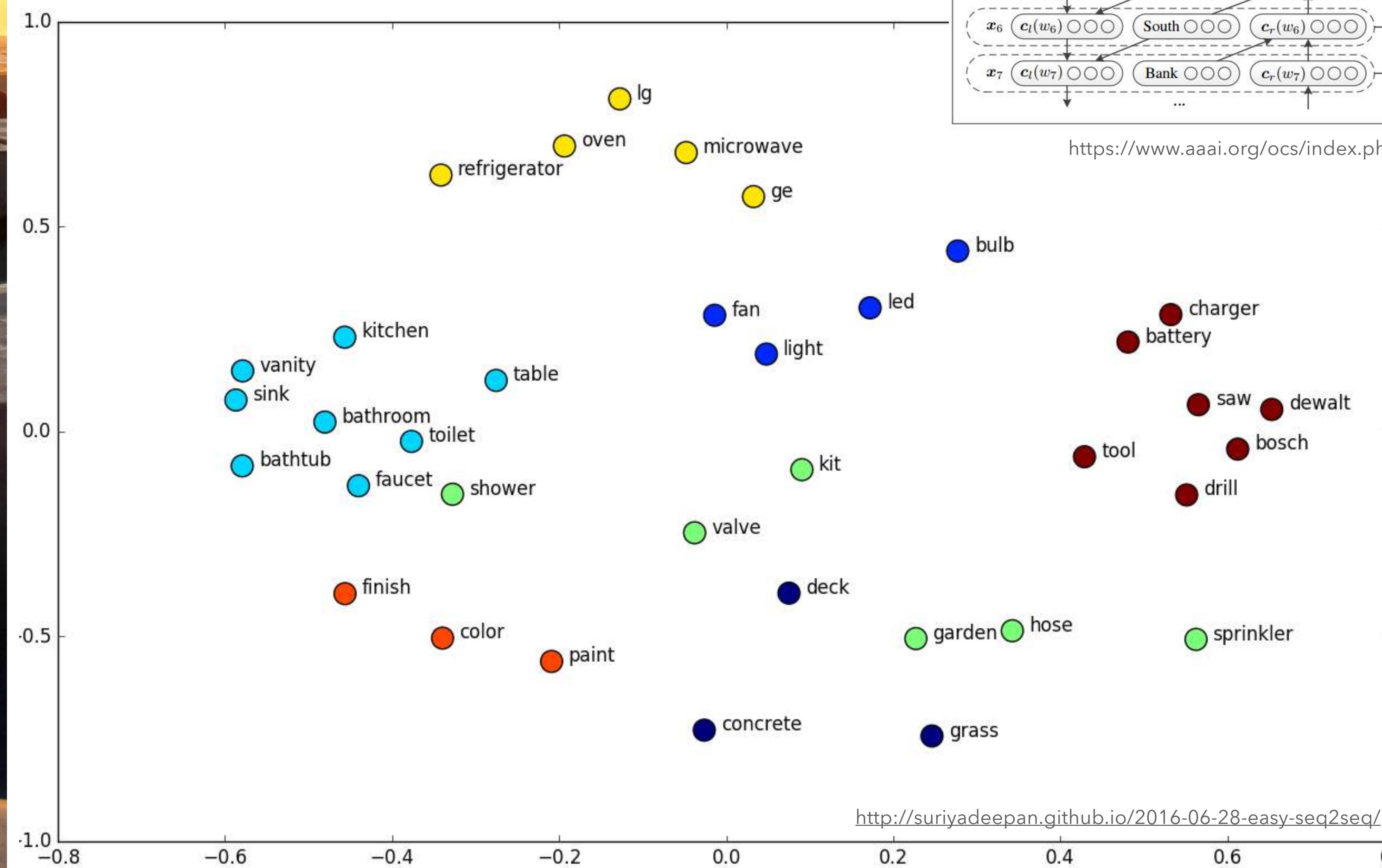
Encoder

Decoder

<https://einstein.ai/research/your-tldr-by-an-ai-a-deep-reinforced-model-for-abstractive-summarization>



# CLASSIFICATION

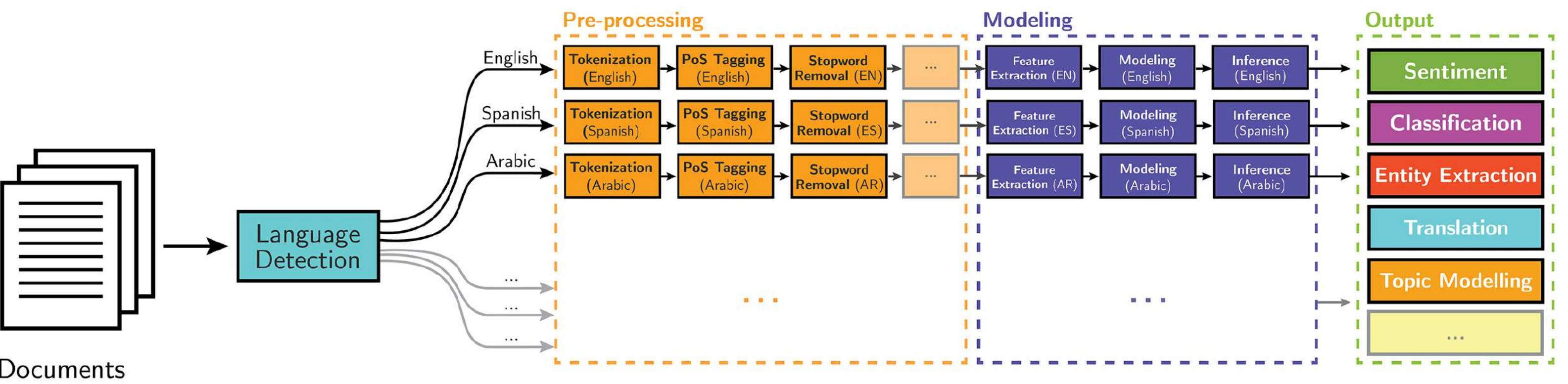


<https://www.aaai.org/ocs/index.php/AAAI/AAAI15/paper/view/9745/9552>

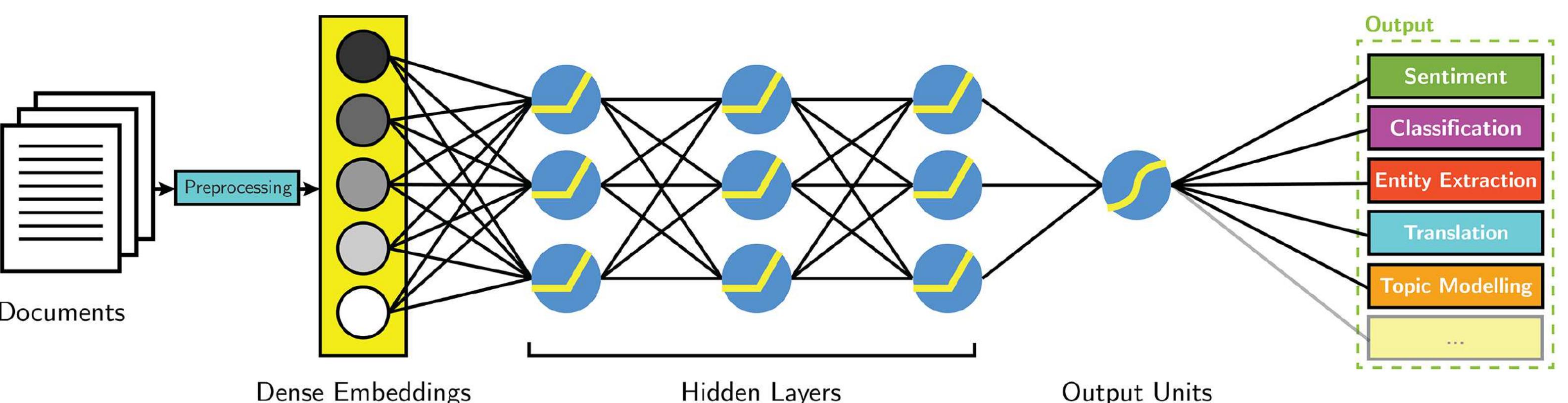
# CLASSICAL VS DEEP LEARNING NLP



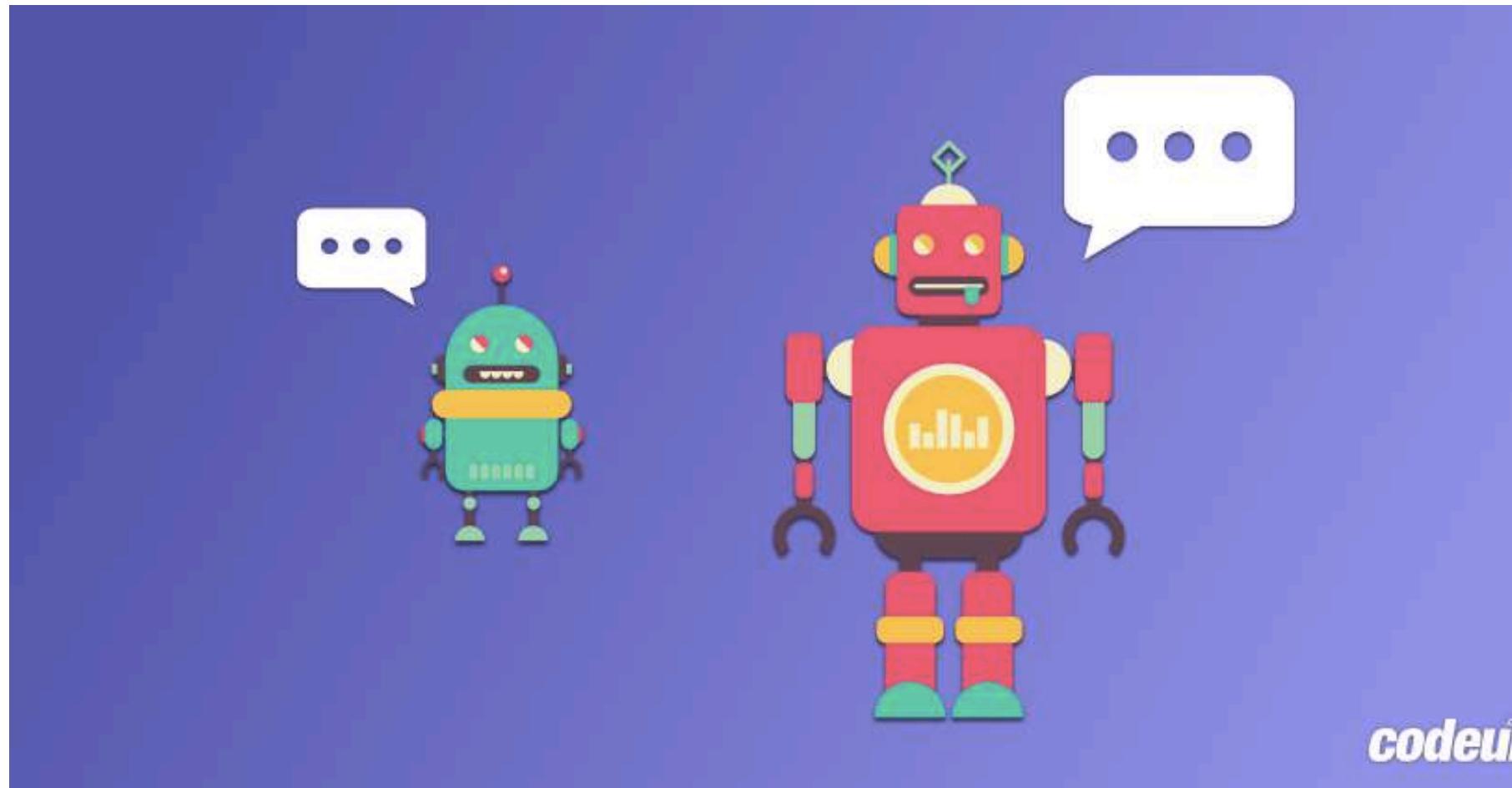
## Classical NLP



## Deep Learning-based NLP

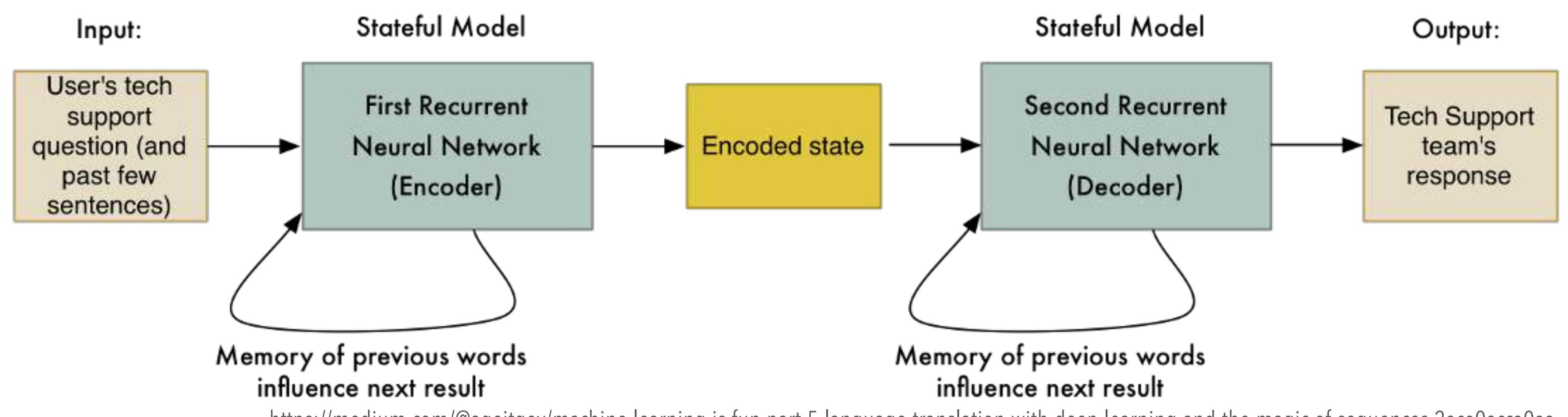


# AGENTS CONVERSATIONNELS



The screenshot shows a mobile-style conversation interface for a medical assistant named Melody. The user's messages are in blue, and Melody's responses are in white with a blue border. The user asks about a baby born prematurely with yellowish skin. Melody asks for the patient's age and if they are experiencing symptoms like diarrhea, vomiting, or abdominal pain. A radio button for "I'm not sure" is selected. At the bottom, there is a "SEND TO DOCTOR" button and a doctor character on the right.

<https://venturebeat.com/2016/10/11/baidu-launches-medical-assistant-chatbot-to-help-doctors-collect-patient-information/>



# DIALOGUES

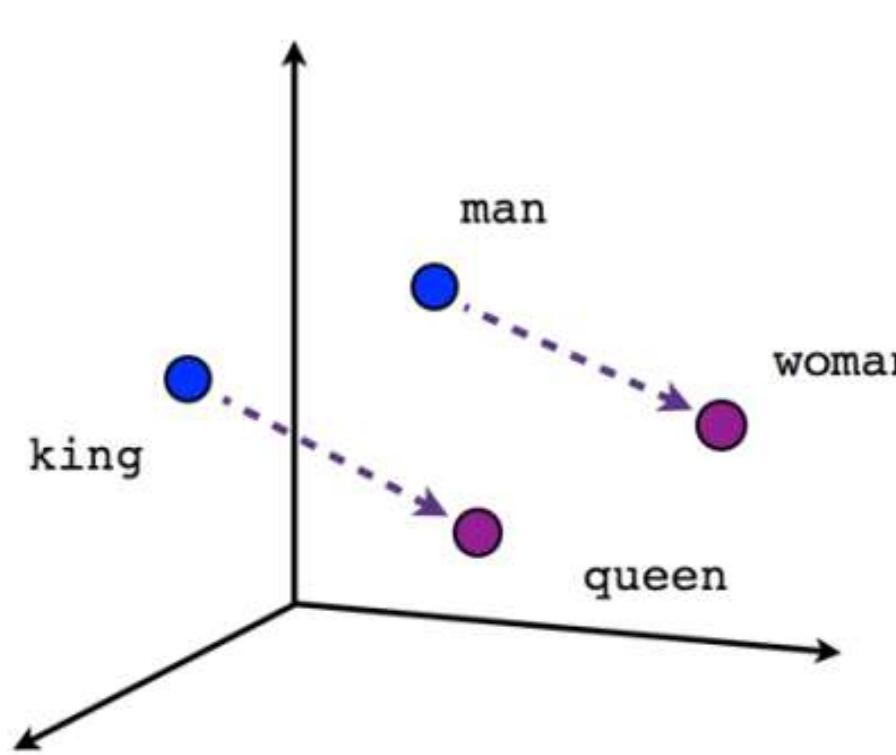
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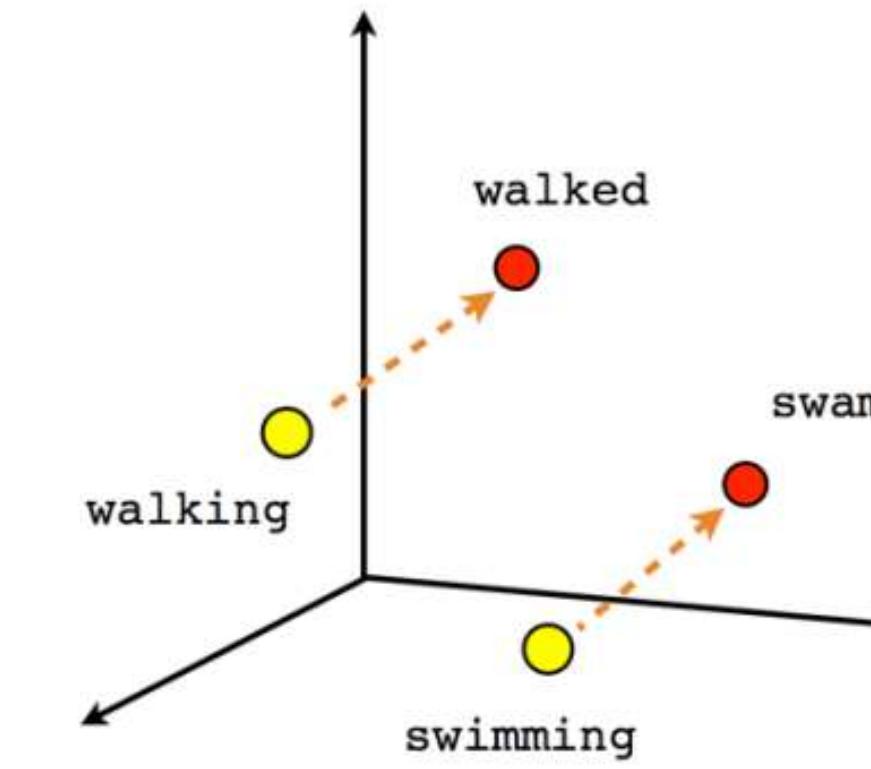


# Au cœur du NLP

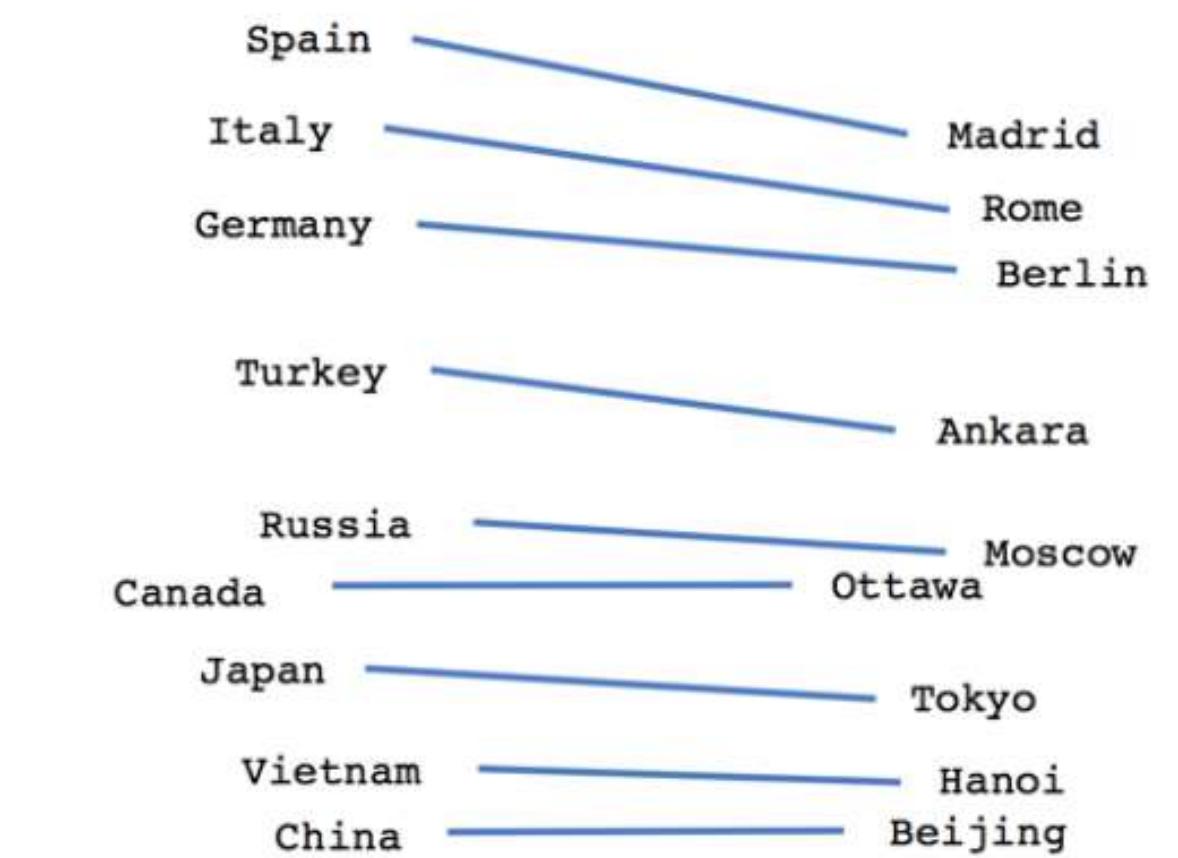
# WORD EMBEDDING



Male-Female



Verb tense

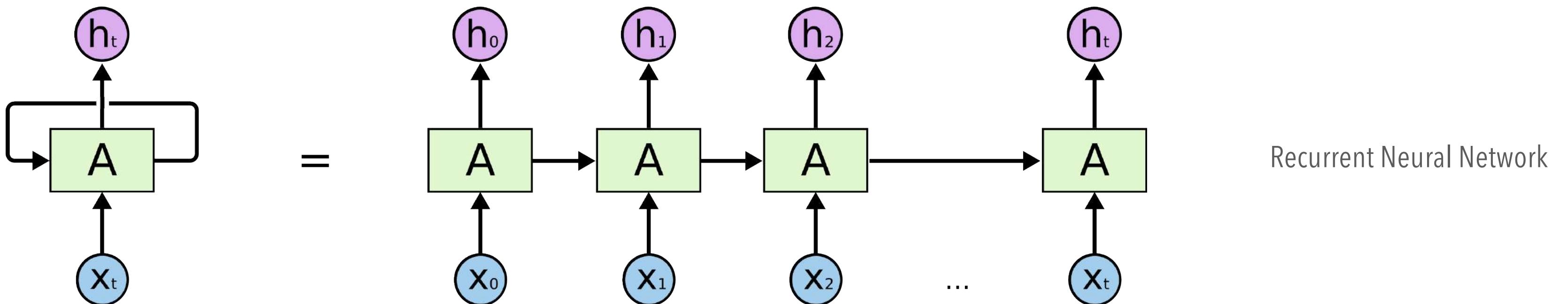


Country-Capital

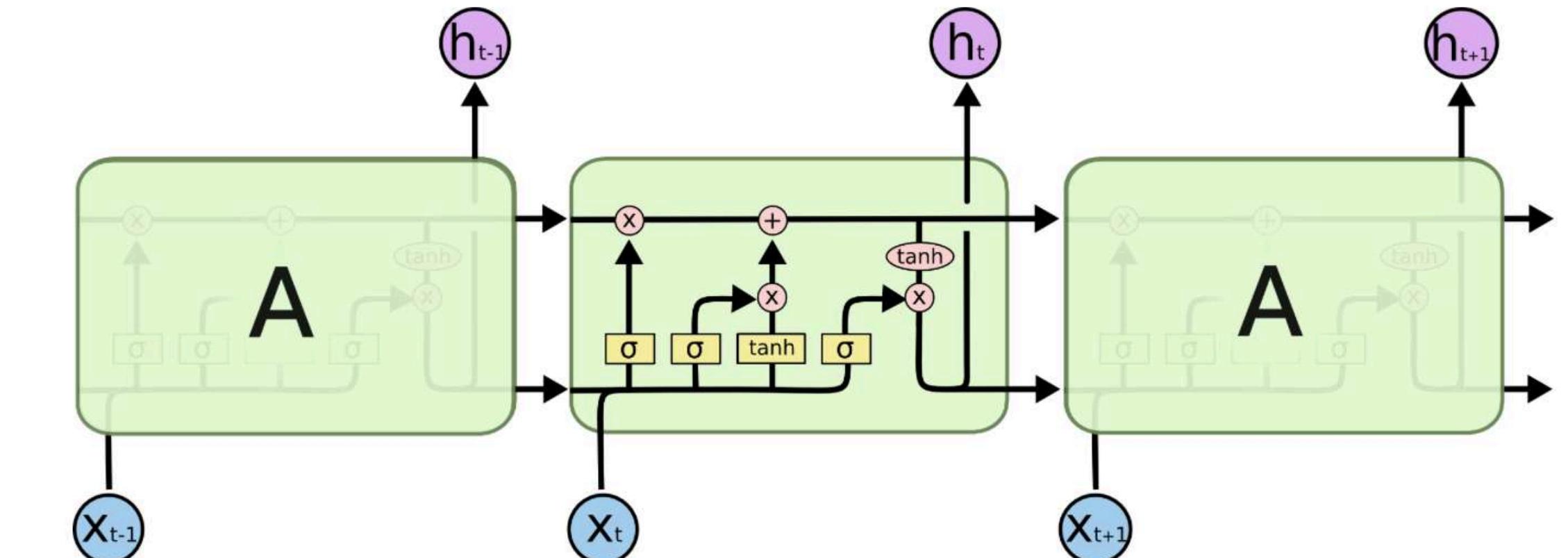
<https://www.analyticsvidhya.com/blog/2017/06/word-embeddings-count-word2veec/>



# RNN | LSTM | GRU



Long Short Term Memory



The repeating module in an LSTM contains four interacting layers.



# SEQ2SEQ | ATTENTION MECHANISM | CTC

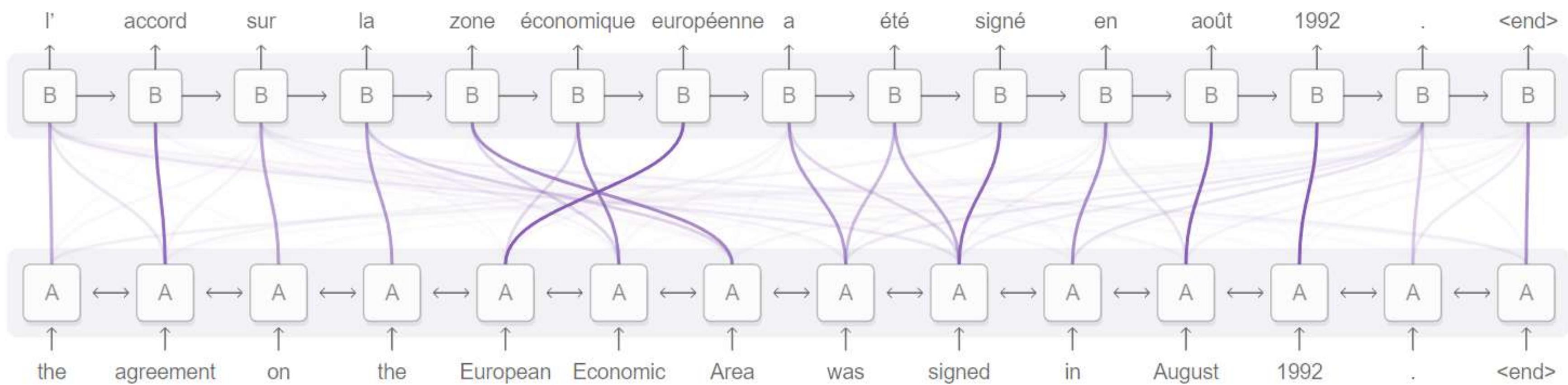
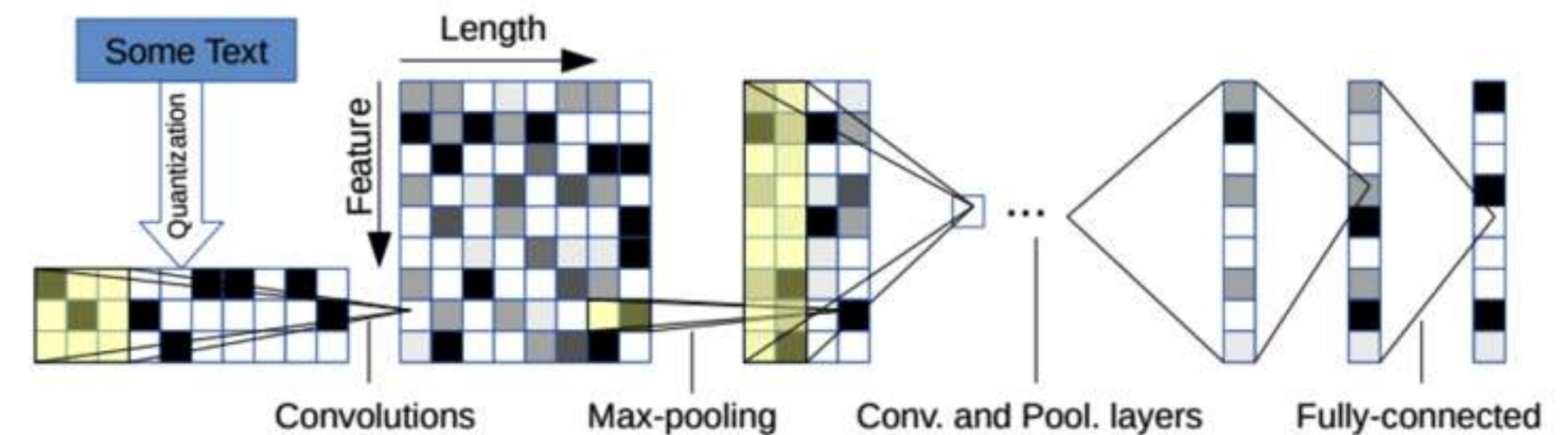


Diagram derived from Fig. 3 of [Bahdanau, et al. 2014](#)



# CONVOLUTION NETWORK FOR NLP



<http://www.kdnuggets.com/2015/03/deep-learning-text-understanding-from-scratch.html>

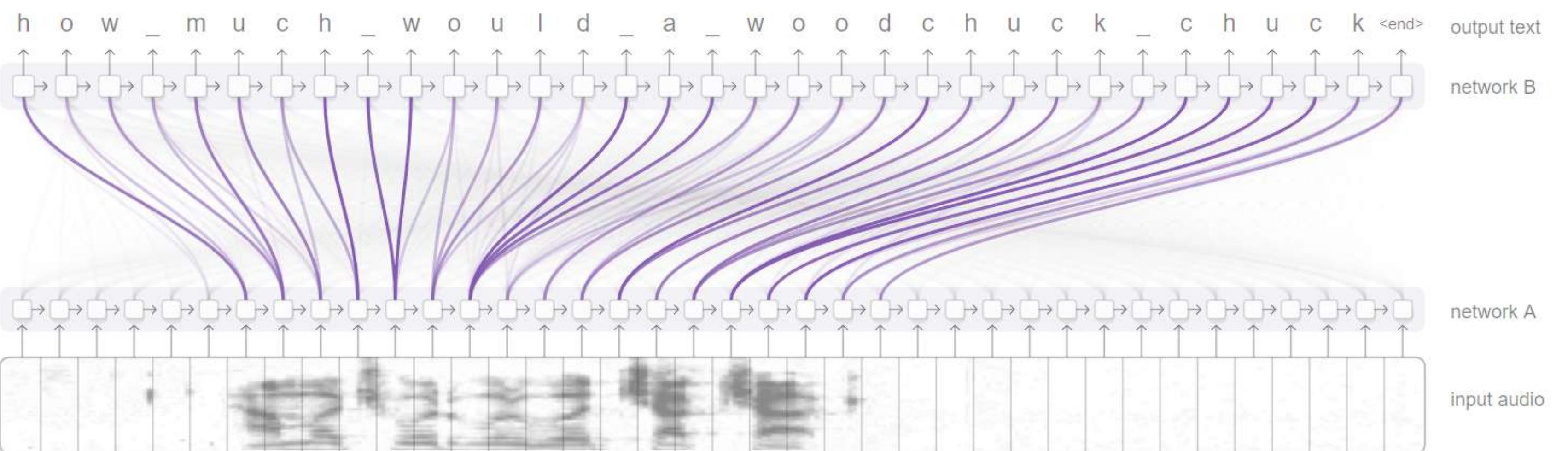


Figure derived from Chan, et al. 2015

<https://distill.pub/2016/augmented-rnns/>

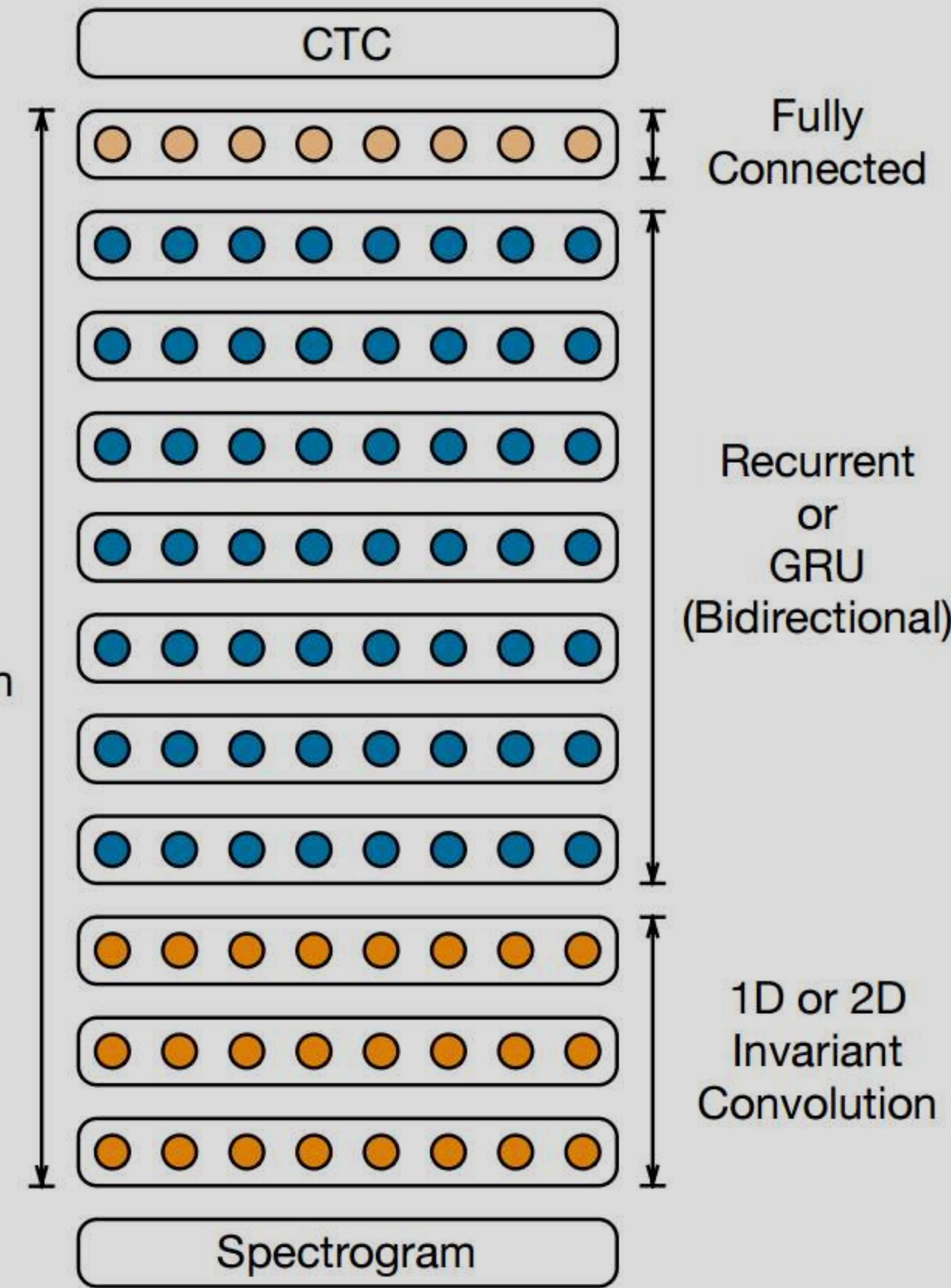


# L'exemple Allo-Media





Batch  
Normalization



DEEPSPEECH 2

Photo by William Stitt on Unsplash



L'EXPERIENCE



IA LeMans Study Group Batch00 - septembre 2017

Photo by Igor Rodrigues on Unsplash



LA SUITE





SO  
HYPE

# LA MINUTE HYPE



A thumbnail for a video titled "AI Creates Facial Animation from Audio". The thumbnail shows a close-up of a person's nose and mouth. The video title is overlaid on the bottom left, and the "TWO MINUTE PAPERS" logo with a stylized atom symbol is on the right. Below the title is a small disclaimer: "Disclaimer: I was not part of this research project, I am merely providing commentary on this work."

[https://youtu.be/ZtP3gl\\_2kBM](https://youtu.be/ZtP3gl_2kBM)

## 3D Face Reconstruction from a Single Image

Drag the 3D model around with your mouse. You can checkout the paper and code [here](#).

A screenshot of a web-based application for 3D face reconstruction. It features a grayscale input image of two people's faces. On the right, there are several interactive buttons: a green "Download Wavefront OBJ File" button, a blue "Try another image" button, a "Z Translate:" slider, a checked checkbox for "Show background image", and social sharing links for Twitter and Facebook. At the bottom, there is a note: "aaron.jackson@nottingham.ac.uk ([website](#)) • WebGL rendering done with the Three.js framework."

<http://www.cs.nott.ac.uk/~psxasj/3dme/>





vincent@neuralia.co  
@vincentporte  
[fb.me/IALeMans](https://fb.me/IALeMans)

# TUTO LINKS

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## Summarization

- <http://deeplearning.lipingyang.org/tensorflow-examples-text/>
- <https://hackernoon.com/how-to-run-text-summarization-with-tensorflow-d4472587602d>
- <https://medium.com/@ilblackdragon/tensorflow-text-classification-615198df9231>

## title prediction

- <https://www.dataquest.io/blog/natural-language-processing-with-python/>

## Classification

- <http://manishankert.blogspot.fr/2017/04/text-classification-using-cnn-writte-in.html>
- <https://syncedreview.com/2017/05/19/big-picture-machine-learning-classifying-text-with-neural-networks-and-tensorflow/>
- [\[http://www.developintelligence.com/blog/2017/06/practical-neural-networks-keras-classifying-yelp-reviews/\]](http://www.developintelligence.com/blog/2017/06/practical-neural-networks-keras-classifying-yelp-reviews/)
- LSTM Networks for Sentiment Analysis <http://deeplearning.net/tutorial/lstm.html>

## keywords extraction

- <https://www.airpair.com/nlp/keyword-extraction-tutorial>

## videos siraj

- How\_to\_make\_a\_text\_summarizer | <https://youtu.be/ogrJaOIuBx4> | [https://github.com/llSourcell/How\\_to\\_make\\_a\\_text\\_summarizer/](https://github.com/llSourcell/How_to_make_a_text_summarizer/)
- How to Make a Language Translator | <https://youtu.be/nRBnh4qbPHI> | [https://github.com/llSourcell/How\\_to\\_make\\_a\\_language\\_translator](https://github.com/llSourcell/How_to_make_a_language_translator)
- How to Do Sentiment Analysis | <https://youtu.be/si8zZHkufRY> | [https://github.com/llSourcell/How\\_to\\_do\\_Sentiment\\_Analysis](https://github.com/llSourcell/How_to_do_Sentiment_Analysis)