NLP basics and question answering

1. **Deep Learning specialization – Sequence Models**

**/ NLP course**

<https://www.coursera.org/learn/nlp-sequence-models/home/week/2>

Natural language processing with deep learning is an important combination. Using word vector representations and embedding layers you can train recurrent neural networks with outstanding performances in a wide variety of industries. Examples of applications are sentiment analysis, named entity recognition and machine translation.

<https://www.coursera.org/learn/nlp-sequence-models/home/week/3>

Sequence models can be augmented using an attention mechanism. This algorithm will help your model understand where it should focus its attention given a sequence of inputs. This week, you will also learn about speech recognition and how to deal with audio data.

1. **Natural Language Processing specialization - NLP Sequence Models**

<https://www.coursera.org/learn/sequence-models-in-nlp/home/week/3>

Learn about how long short-term memory units (LSTMs) solve the vanishing gradient problem, and how Named Entity Recognition systems quickly extract important information from text. Then build your own Named Entity Recognition system using an LSTM and data from Kaggle!

<https://www.coursera.org/learn/sequence-models-in-nlp/home/week/2>

Learn about the limitations of traditional language models and see how RNNs and GRUs use sequential data for text prediction. Then build your own next-word generator using a simple RNN on Shakespeare text data!

1. **HSE – Natural Language Processing**

[**https://www.coursera.org/learn/language-processing/home/week/4**](https://www.coursera.org/learn/language-processing/home/week/4)

Nearly any task in NLP can be formulates as a sequence to sequence task: machine translation, summarization, question answering, and many more. In this module we will learn a general encoder-decoder-attention architecture that can be used to solve them. We will cover machine translation in more details and you will see how attention technique resembles word alignment task in traditional pipeline.

[**https://www.coursera.org/learn/language-processing/home/week/3**](https://www.coursera.org/learn/language-processing/home/week/3)

This module is devoted to a higher abstraction for texts: we will learn vectors that represent meanings. First, we will discuss traditional models of distributional semantics. They are based on a very intuitive idea: "you shall know the word by the company it keeps". Second, we will cover modern tools for word and sentence embeddings, such as word2vec, FastText, StarSpace, etc. Finally, we will discuss how to embed the whole documents with topic models and how these models can be used for search and data exploration.

1. **AI For Medical Treatment**

**DeepLearning.AI**

[**https://www.coursera.org/learn/ai-for-medical-treatment/home/week/2**](https://www.coursera.org/learn/ai-for-medical-treatment/home/week/2)

* Extracting disease labels from clinical reports
* Question Answering with BERT