**Recurrent Neural Networks**

# *Introduction to RNNs.*

* Introduction.
* Architectures.
* Math And Algorithm.
* Learning In RNN.
* Applications.

# *Training And Building RNN.*

* Models Description.
* Datasets.
* Training Process.
* Implement RNN.

# *Problems of RNNs And Extension Models.*

* Problems And Solution.
* Extension Models (Definition And Visual Representation).

# Paper And Research Source:

## - Paper:

[1]:<http://scholarpedia.org/article/Recurrent_neural_network>

[2]:<https://www.fit.vut.cz/research/group/speech/public/publi/2011/mikolov_icassp2011_5528.pdf>

[3]:<https://www.fit.vut.cz/research/group/speech/public/publi/2010/mikolov_interspeech2010_IS100722.pdf>

[4]:<https://arxiv.org/pdf/1801.01078>

[5]:<https://d1wqtxts1xzle7.cloudfront.net/31279335/___Recurrent_Neural_Networks_Design_And_Applicatio%28BookFi.org%29-libre.pdf?1390940527=&response-content-disposition=inline%3B+filename%3DEffects_of_Liquid_and_Encapsulated_Lacti.pdf&Expires=1726463845&Signature=CBxkce8byz0crIEKFfUT1mZ4dYDh5zn-NL5ouRMpdN0eGVl2NcrbfVqVutOH6lla-JpPMaUn3slwm2P8-4hwhnKKFUedgoTCweeVHpm3mxiK5zS4AB92mV8RWSLH4r1EkFtRWGjOZZXj2AbJwNlAW6j3YYON2zo7rcXOi~LRawbcXy2~a9~k9kN0~fhLyiTvToxBkd5bvte-1tPnmdK4J~nNR9-E0Z4qC12iURlMve6wR54ZdUNYFskhdWKX5KgnvkQCO2uVQCavgn23~gMBMLF7i8VoE~cnH9Flpbp1ogu5PnK5oT2Ki1bObMuoB-w-rmtRtQjimqs5D~rayQSjgQ__&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA>

[6]: <https://dennybritz.com/posts/wildml/recurrent-neural-networks-tutorial-part-1/>

[7]: <https://dennybritz.com/posts/wildml/recurrent-neural-networks-tutorial-part-2/>

[8]: <https://dennybritz.com/posts/wildml/recurrent-neural-networks-tutorial-part-3/>

[9]: <https://www.cs.utoronto.ca/~ilya/pubs/ilya_sutskever_phd_thesis.pdf>

[10]: <https://arxiv.org/pdf/1912.05911>

## - Research Source:

[1]: <https://arxiv.org/>

[2]: <https://scholar.google.com/>

[3]: <https://openai.com/research/>

## - Datasets Research:

[1]: <https://datasetsearch.research.google.com/>

[2]: <https://data.gov/>

[3]: <https://paperswithcode.com/datasets>