# \*\*Deep Learning Based Abstractive Text Summarization: Approaches, Datasets, Evaluation Measures, and Challenges by Dima Suleiman and Arafat Awajan

The problem of vanishing gradients, which happens while training a long sequence with an RNN, is solved with gated RNNs. Allowing the gradients to backpropagate along a linear path using gates, each with a weight and bias, can address this problem.The weights and biases of the gates are updated during training. LSTM and GRU,two RNN types, are the most often used gated RNNs.

\*\*Generating News Headlines with Recurrent Neural Networks by [Konstantin Lopyrev](https://arxiv.org/search/cs?searchtype=author&query=Lopyrev%2C+K)

Rnn encoder-decoder summarisation is utilised with LSTM units and attention to generating headlines from the text of news articles. This model is used in several NLP applications, such as machine translation and text summarisation.The vector representation of the current input word and the output of the hidden states of all previous words are merged and supplied to the next hidden state in the RNN encoder-decoder model at specified hidden states on the encoder side.The model is quite effective in predicting headlines from the same newspapers as it was trained on.

\*\*[Abstractive text summarization using LSTM-CNN based deep learning](https://link.springer.com/article/10.1007/s11042-018-5749-3) by S Song, H Huang

LSTM and GRU are generally used for abstractive summarisation.since LSTM has a memory unit that provides extra control but the computation time of the GRU is less.Also,while it is easier to tune the parameters with LSTM, the GRU takes less time to train.

\*\*D. Bahdanau, K. Cho, and Y. Bengio, “Neural machine translation by jointly learning to align and translate,” in Proceedings of the International Conference on Learning Representations, Canada, 2014

Before being used for NLP applications like text summarisation, the attention mechanism was used for neural machine translation.

\*\*Z. Cao, F. Wei, W. Li, and S. Li, “Faithful to the original: fact aware neural abstractive summarization,” in Proceedings of the AAAI Conference on Artificial Intelligence (AAAI), New Orleans, LA, USA, February 2018.

In this paper, dual attention was used.Abstractive summarization necessitates the fusion of several elements of the original text, which might lead to the creation of fake facts. According to a survey, over 30% of the outputs from neural summarization systems have this issue.To avoid generating fake facts in a summary, The dual-attention sequence-to-sequence framework is then suggested. Two bidirectional GRU encoders and one dual attention decoder make up the proposed dual attention technique.