Summary of the Paper

“Effective Approaches to Attention-based Neural Machine Translation”

Link:- 1508.04025

The paper identifies the need for more effective attention mechanisms that allow the model to focus on relevant parts of the source sentence at each decoding step, thereby improving translation quality.

two novel attention mechanisms:-

- **Global Attention**: This mechanism computes attention scores for all source words at each decoding step, allowing the model to consider the entire source sentence when generating each target word.
- **Local Attention**: Instead of attending to all source words, this mechanism focuses on a subset of source words at a time. This approach reduces computational complexity while still enabling the model to capture relevant information from the source sentence.

Results:-

The results show that both global and local attentional mechanisms are effective in improving NMT, with the local attention approach achieving a significant gain of 5.0 BLEU points over non-attentional systems, and the ensemble model using different attention architectures yielding a new state-of-the-art result in the WMT’15 English to German translation task.

BLEU (Bilingual Evaluation Understudy):-

It is a metric used to automatically evaluate the quality of machine-translated text by comparing it to one or more reference translations created by humans.