An Abstractive Text Summarization using Decoder Attention with Pointer Network

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Abstract: *In contemporary times, an abundance of unstructured data prevails across social media and the web. Text summarization, a process aimed at distilling relevant information concisely without altering its core meaning, has become crucial. Manual text summarization is resource-intensive, prompting the exploration of automated methods. While deep learning algorithms, particularly in abstractive text summarization, have gained popularity, further research is needed to understand their integration with semantic-based or structure-based approaches.*

This research leverages a dataset of 1,735 resumes sourced from Kaggle to propose a novel framework. The framework combines semantic data transformations and deep learning approaches to enhance abstractive text summarization. A key focus is addressing the challenge of handling unregistered words. The proposed solution, Decoder Attention with Pointer Network (DA-PN), is introduced. DA-PN incorporates a coverage mechanism to mitigate word repetition in generated text summaries, thereby improving the quality of summaries. The method aims to safeguard against the propagation of errors in generated text summaries. The performance of the proposed approach is evaluated using the Recall Oriented Understudy for Gisting Evaluation (ROUGE) indicator. Notably, the proposed method achieves an average ROUGE score of 26.28, surpassing existing methods. The emphasis on combining semantic data transformations, deep learning, and addressing specific challenges like word repetition sets this research apart in the field of abstractive text summarization.

Keywords: Abstractive Text Summarization, Decoder Attention, Deep Learning, Pointer Network, Recall Oriented Understudy for Gisting Evaluation (ROUGE).

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