

Meta-Heuristic Approaches with LM-based Selectors for Extractive Summarization

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Abstract—This work demonstrates the cost-effectiveness and suitability of a meta-heuristic algorithm as a selector for the extractive summarization task compared to the LM-based selector. Meta-heuristic-based selector achieves 0.05 higher ROUGE-1 score at 0.320 and 0.054 higher ROUGE-2 score than LM-based baseline at 0.116 while using at least one order of magnitude less computation time under the same condition. This work also demonstrate that the characteristics of LM-based selectors and meta-heuristic methods are complementary, which can be combined to achieve even better results of 0.351 ROUGE-1, 0.141 ROUGE-2, and 0.218 ROUGE-L.

Keyword—Extractive Summarization, News Summarization, NSGA-II, CNN/DailyMail, BERT, RoBERTa, XLNet

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