

Camera Ready Summary

Conference Name

4th International Conference on Electrical, Computer and Communication Engineering

Paper ID

727

Paper Title

Advancing Low-Resource NLP: Contextual Question Answering for Bengali Language Using Llama

Abstract

Natural language processing (NLP) has witnessed significant advancements in recent years, particularly in improving question-answering (QA) systems for well-resourced languages such as English. However, the development of such systems for low- resource languages, including Bengali, remains insufficiently explored. This study proposes an approach to developing a Bengali QA system utilizing the Llama- 3.2-3B-Instruct model, leveraging transfer learning techniques on a synthetic dataset derived from the SQuAD 2.0 benchmark. The experiments achieved an F1 score of 42.77%, marking a 4.02% improvement over the previous best performance of multilingual BERT (mBERT) variants. These results establish a benchmark against human responses and underscore the potential of transfer learning in advancing QA capabilities for Bengali and similar low-resource languages.

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Camera Ready Questions Response**1. Presentation Mode**

Online

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