**English Textbook Content Comprehension with LDA for the perspective of Bangladesh**

**Abstract:** In Bangladesh, rural students exhibit inadequate proficiency in English language. Pupils can not fully grasp context from National Curriculum and Textbook Board (NCTB) provided textbooks. In this research study an unsupervised topic modeling LDA approach is proposed to comprehend the context of NCTB’s English book. Exploratory analysis is shown to depict significant keywords related to subtle topic in context. It identifies latent topics within lessons that uncovers coherent themes from textual data. Extensive analysis is conducted to visualize, high impact keywords, co-occurrence patterns and correlation between extracted topics. It is anticipated it improves curriculum provided English textbook content synthesis and acquisition skill of learners. A prototype mobile app is developed which incorporates topic modeling extracted keywords. Furthermore, qualitative research survey is undertaken to evaluate its effectiveness on end-users (course instructors of Bangladesh's higher secondary school). The challenges, future potential of LDA extracted content integrated mobile app into the learning process is explored. After collecting feedback, word clouds were used to analyze the participants' recommended terms, and the LIWC approach is used to estimate overall sentiment. LIWC score showed positive sentiment and survey process enticed the participants, demonstrates learners eager to use NLP technology driven topic modeling approach in teaching and learning, and there are tremendous opportunities.

**Keywords:** Natural Language Processing (NLP), Topic Modeling, Latent Dirichlet Allocation (LDA), Exploratory Analysis, Textbook Learning, Coherence

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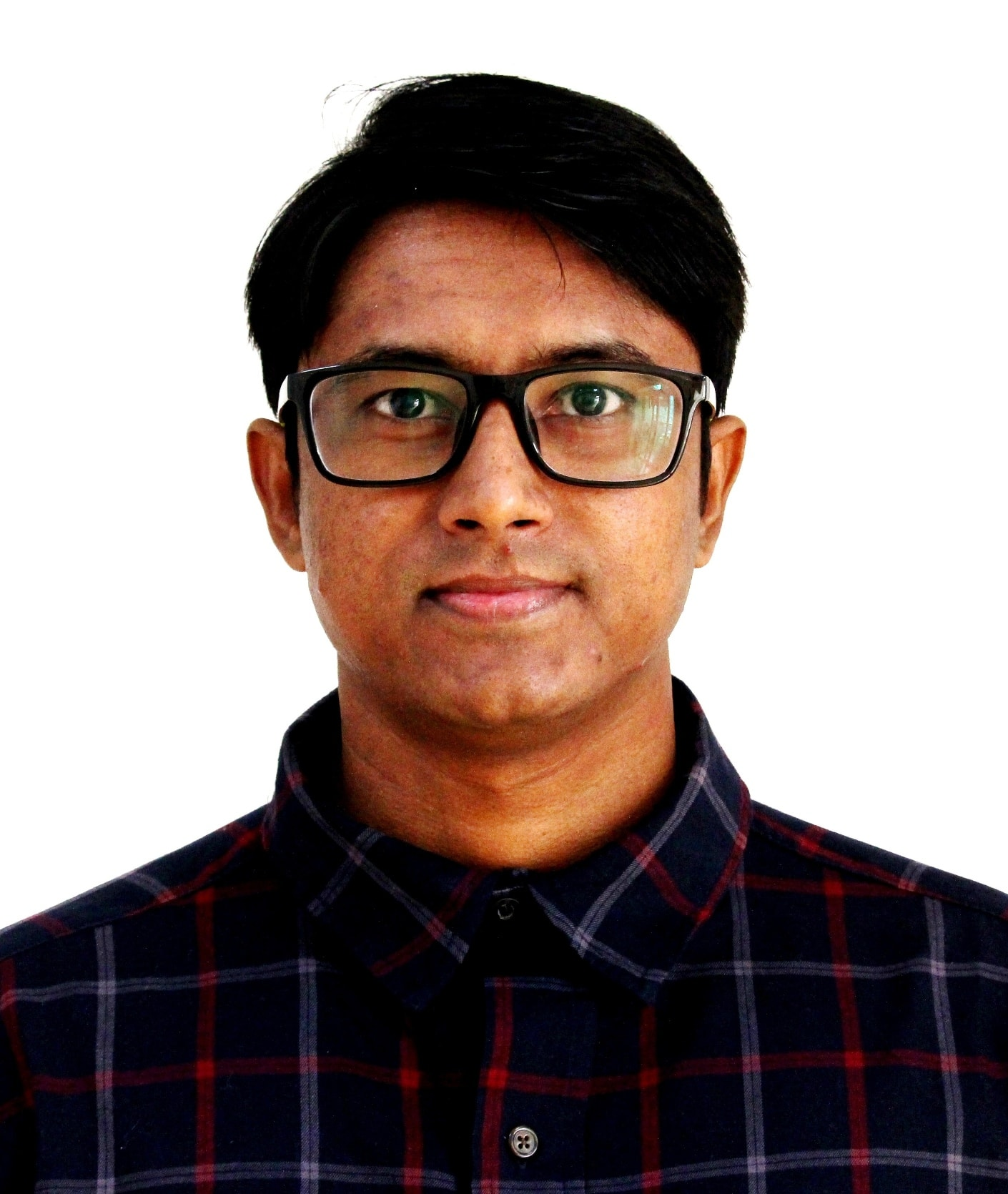
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