**LinguoInsight: A Novel LDA-Based Textbook Comprehension Model to improve the acquisition skills of learners**

**Abstract:** In diverse educational settings, students face challenges in fully comprehending the context of textbooks. Addressing this, our research introduces an innovative unsupervised topic modeling approach, LDA, to unravel latent topics within lessons across various subjects and curricula. The exploratory analysis reveals significant keywords, co-occurrence patterns, and correlations, contributing to improved comprehension and acquisition skills. Recognizing the universal demand for effective learning tools, our work demonstrates that learners globally express eagerness to embrace the NLP technology-driven topic modeling approach. This signifies a crucial step towards overcoming challenges in textbook comprehension and fostering a more engaging and efficient learning environment across diverse educational contexts. A prototype mobile app, integrating LDA-based topic modeling, is developed and tested with educators globally. The study explores the potential and challenges of integrating LDA-extracted content into mobile apps for universal learning enhancement. Feedback analysis, sentiment estimation, and user engagement affirm the applicability and enthusiasm for this NLP-driven approach in teaching and learning across disciplines.

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

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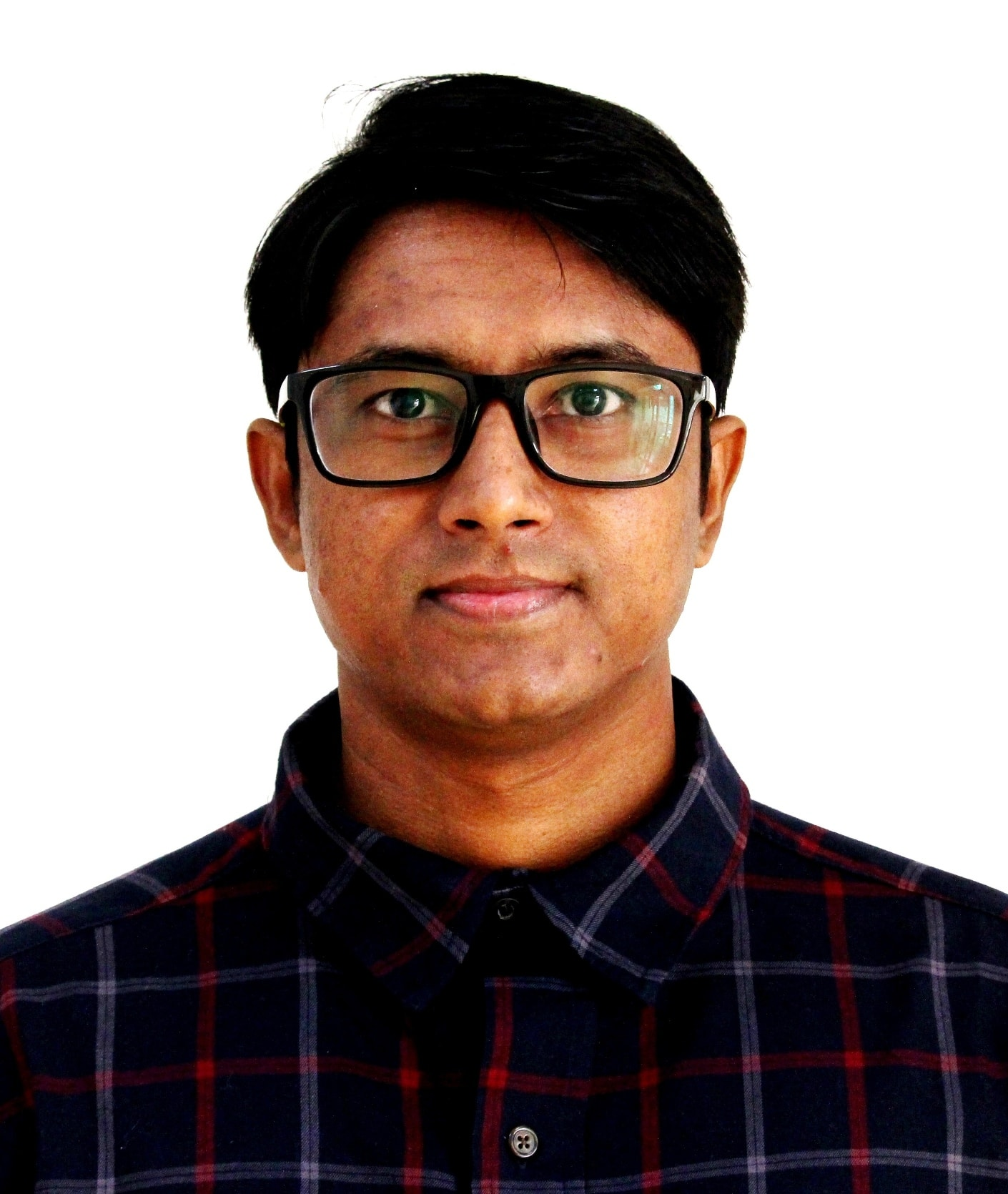
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**Conflict of Interest – None**

There is hereby declare that there is not any Conflict of Interest.