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Notice for the PhD Viva Voce Examination

Mr Angelo Baby, Registration Number: 2071301, PhD Scholar at the Department of Computer Science, School of Sciences, CHRIST (Deemed to be University) will defend his PhD thesis at the public viva-voce examination on Monday, 27 April 2026 at 10.30 am in Room No. 044, Ground Floor, R&D Block, CHRIST (Deemed to be University), Bengaluru - 560029, Karnataka, India.

Title of the Thesis	:	**Machine Learning Model to Compute Domain Based Semantic Text Similarity**
Discipline	:	**Computer Science**
External Examiner - I	:	**Dr R Rajeshwari** Associate Professor Department of Mathematics Sathyabama Institute of Science and Technology Jeppiar Nagar Chennai - 600119 Tamil Nadu
External Examiner - II	:	**Dr Bashir Alam** Professor Department of Computer Engineering Jamia Millia Islamia Jamia Nagar New Delhi - 110025
Supervisor	:	**Dr Vaidhehi V** Associate Professor Department of Computer Science School of Sciences CHRIST (Deemed to be University) Bengaluru - 560029 Karnataka

The members of the Research Advisory Committee of the Scholar, the faculty members of the Department and the School, interested experts and research scholars of all the branches of research are cordially invited to attend this open viva–voce examination.

Registrar (Academics)

Place: Bengaluru
Date: 21 April 2026

ABSTRACT

Formative listening comprehension analysis of students after each lecture has been a major challenge that still exists in learning institutions. Conventional assessment evaluation methods are not enough to evaluate the same and this work is dealing with this gap by suggesting machine learning based techniques which analyzes student comprehension by means of semantic alignment between teacher lecture content and student notes. This research will mainly aim at creating an efficient semantic text synonymity analyzer of domain based multiple documents through machine learning methods. The first contribution presents a new redundancy reduction and sentence prioritization by integrating concept mapping and contextualization with the implementation of Soft Cosine Measure (SCM) and Maximal Marginal Relevance (MMR). The second contribution suggests the Cross Reference Attention Transformer (CRAT) model in order to extract domain relevant phrases. The third contribution presents Domain Aware Attention Mechanism (DAAM) which incorporates the domain specific information into the attention process with the help of a special domain matrix. The last work is a Semantic Text Analyzer framework between student and lecture notes to evaluate the conceptual understanding of the students. The success of the methods suggested are justified by means of ROUGE metrics, METEOR and measures of semantic similarity and the findings are consistent with improved results in comparison with current baseline models. The results promote the quality education, educational analytics innovation and sustainable knowledge growth in academic institutions.

Keywords: *Attention Mechanism, Comprehension Analysis, Cross Reference Attention, Domain Knowledge, Educational Technology, Key Phase Extraction, Large Language Models, Natural Language Processing, Redundancy Reduction, Sentence Prioritization, Similarity Measures, Student Lecture Notes.*

Publications:

1. **A. Baby** and V. Vaidhehi, "Conceptual comprehension analysis of a student using soft cosine measure," *AIP Conference Proceedings*, vol. 2463, p. 020037, 2022. doi: 10.1063/5.0080146.
2. **A. Baby**, V. Vaidhehi, and J. Jose, "Redundancy reduction and sentence prioritisation of the student lecture notes using soft cosine implemented MMR algorithm," *Veredas do Direito*, vol. 22, no. 4, p. e223612, 2025. doi: 10.18623/rvd.v22.n4.3612.