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Notice for the PhD Viva Voce Examination

Mr Nagendra N (Registration Number: 2071902), PhD scholar at the School of Sciences, CHRIST (Deemed to be University), Bangalore will defend his PhD thesis at the public viva-voce examination on Monday, 30 September 2024 at 11.30 am in Room No. 044, Ground Floor, R & D Block, CHRIST (Deemed to be University), Bengaluru - 560029.

Title of the Thesis	:	**Aspect Based Multi Classification for Text Mining Using Neural Attention Model**
Discipline	:	**Data Science**
External Examiner (Outside Karnataka)	:	**Dr S Anbuchelian** Associate Professor Department of Computer Science 12, Sardar Patel Road Anna University, Guindy, Chennai Tamil Nadu - 600025
External Examiner (Within Karnataka)	:	**Dr Farida Begam M** Professor Department of Computer Science and Engineering PES University, Bengaluru Karnataka
Supervisor	:	**Dr Chandra J** 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

Place: Bengaluru
Date: 18 September 2024

ABSTRACT

The paragraph emphasizes the critical role of aspect-based text classification in e-commerce, spanning diverse sectors such as food, online shopping, and restaurants. Traditional approaches typically focus on a limited number of domains and struggle with multi-classification tasks, overlooking the need to categorize sentences based on specific domain contexts. In contrast, e-commerce platforms generate large volumes of user-generated content, including reviews and product descriptions, which require more advanced classification techniques to extract meaningful insights.

The Aspect-Based Neural Attention Model (ABNAM) was introduced to address the limitations of traditional models. ABNAM significantly enhances the accuracy and relevance of classification by considering the unique characteristics of each domain, offering a more tailored approach for businesses across various sectors. Experimental results unequivocally show that ABNAM outperforms traditional models, such as TF-IDF, N-Gram, CNN, SVM, Random Forest, and Naïve Bayes, achieving an exceptional accuracy of 97%. Unlike conventional methods that struggle with multi-classification, ABNAM effectively categorizes sentences into sixteen distinct classes, delivering better recall, precision, and performance across different datasets. This makes ABNAM a highly effective and innovative solution for processing complex textual data in e-commerce, offering businesses more accurate insights into customer feedback and product reviews.

Keywords: Natural Language Processing, Machine Learning, Attention, TF-IDF, N-Gram, Word2Vec, Text Classification

Publications:

1. Nagendra. N, and Chandra. J, "Attention Based Sentence Classification Using Term-Frequency and Inverse Document Frequency and N-gram," India Patent 2022-4104-8840 A, September 02, 2022.
2. Nagendra. N, and Chandra. J, (2024). "Sentence Classification Using Attention Model for E-Commerce Product Review." *Journal of Computer Science, 20*(5), 535-547. https://doi.org/10.3844/jcssp.2024.535.547.
3. Nagendra. N, and Chandra. J, "A Systematic Review on Features Extraction Techniques for Aspect Based Text Classification using Artificial Intelligence," presented at the ECS Transactions (ECST) from the First International Conference on Technologies or Smart Green Connected Society 2021, Japan, p. 29–30, Nov. 2021.doi: 10.1149/10701.2503ecst.
4. Nagendra. N, and Chandra. J, "Sentence Classification using Machine Learning with Term Frequency–Inverse Document Frequency with N-Gram," in Proc. Rahul Srivastava and Aditya Kr. Singh Pundir (eds), New Frontiers in Communication and Intelligent Systems, SCRS., p. 337–346. May. 2022. doi: 978-81-95502-00-4/35.
5. Nagendra. N, and Chandra. J, "Hybrid Approach for Multi-Classification of News Documents Using Artificial Intelligence," 5th International Conference on Intelligent Communication Technologies and Virtual Mobile Networks (ICICV 2024) – IEEE Explorer.