

**WAYAKARANA - SINHALA ACTIVE VOICE INTO PASSIVE
VOICE CONVERTER USING RULE BASED APPROACH
WITH GRAMMAR ERROR CORRECTION**

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ABSTRACT

In the world, more than 16 million people speak Sinhala, which is the official language of Sri Lanka. It is a morphologically complex language that evolved from Pali and Sanskrit. The Sinhala language is one of the few that has diglossia, where the spoken and written forms are different. Because it is governed by numerous grammar rules, Sinhala's written form is quite difficult. There are just a few implementations of Sinhala Grammar due to this intricacy and the limited availability of computerized resources.

Active to passive conversion in Sinhala is a crucial step in the processing of natural language since it shifts the subject and object of a phrase. However, it has been challenging to create an accurate and useful tool for Sinhala active to passive conversion due to a paucity of resources and study in this field.

Wayakarana, the proposed system, is capable of converting sentences written in the active voice in Sinhala into the passive voice using a rule-based approach, as that domain has received the most attention. The system develops as a learning application for students who are learning and practicing Sinhala active voice into passive voice related grammar rules, which are crucial to learn for the GCE O/L examination. Also, the proposed system is able to evaluate the grammatical correctness of the Sinhala sentences using a NMT model.

Keywords: Natural Language Processing, Machine Learning, Deep Learning, Rule Based Approach, Sinhala, Sinhala Grammar, Sinhala Active voice into Passive Voice, Data Science, POS Tagging, Morphological Analyze, NMT

ACM Subject Descriptors:

1. Computing methodologies >> Artificial intelligence >> Natural Language Processing >> Natural Language Processing approaches
2. Computing methodologies >> Artificial intelligence >> Machine learning >> Machine learning approaches >> Neural networks