Chapter 3
Multilingual Novel Summarizer for Visually Challenged Peoples

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ABSTRACT

In our busy lives, most of us hardly have time to read books. This habit of reading is slowly diminishing because of people's busy lives. The situation is significantly difficult for persons who are visually challenged or have lost their vision. As a result, the authors provide a method based on the sense of sound that is better and more accurate than the sense of touch for visually impaired people. This chapter discusses an effective method for condensing books into important keywords in order to avoid having to read the entire text each time. This work employs a variety of APIs and modules, including Gensim, Text Ranking Algorithm, and other functions for translating summary text to speech, allowing the system to assist even the blind.

INTRODUCTION

Giving machines the power to think has always been a far-fetched ambition for humans since the dawn of humanity. People with normal vision may be able to benefit from information received through their ears. In any case, according to WHO data, 285 million individuals worldwide will be designated as visibly impaired by October 2013: Visually impaired are 39 million men, and low vision is 246. Unfortunately, a large number of visually impaired and blind peoples are unable to read conventional news stories in the same way that normal people can, and must instead rely on their fingerprints or special clothing to

read braille, which adds greatly to their weight. Braille is an extraordinary frame of loads of images made of small rectangular braille cells containing small significant knocks called elevated dabs used by the visually impaired and outwardly impaired. People with visual impairments encounter several challenges around the world as they try to establish themselves in a modern, complicated, and competitive world dominated by able-bodied folks. Disabled people are frequently excluded from social activities and are not treated equally to their able-bodied peers.Text summarization is the process of distilling from a source (or source) the most important information to create a shortened version for a specific user (or user) and task (or task).

Humans are generally good at this function because we can comprehend the essence of a written message, extract outstanding aspects, and characterise the documents using human language. However, in today's environment, where there is a plethora of data and a lack of manpower and time to understand it, automatic text summarization methods are essential. Automatic Text Analysis can be beneficial for a variety of reasons. There are numerous reasons why Automatic Text Analysis is useful:

1. Summaries reduce the time it takes to read.
2. Summaries support the selection process when reviewing papers.
3. Automatic summarising improves indexing effectiveness.
4. Automatic algorithms of the summary are less biased than those of human summarizers.
5. Contextual summaries are useful as they provide contextual data in question-answering systems.
6. Using automated or semi-automatic synthesis systems, commercial abstract services can increase the number of text documents they can process.

The approach we present in this paper is beneficial for people with visual impairment as well as for people who have tight schedules are unable to read long novels. Using the PDFminer module that runs through the PDF document, it acts as an interface to retrieve the content, whatever it may be, in textual form.Upon receiving the message, the material is now condensed into a few relevant and self-explanatory keywords by applying the Message rank algorithm, thus saving the effort to go through the entire article. In the next step, this summarized content is converted into a voice that can be perceived directly by people with visual impairment. Thus, with no help from anyone, the content can be delivered to them accurately (Aone, C et al., 1998).

Based on the survey by the World Health organization in 2010, the total population in India is 1181.4 million out of which people who suffer from blindness, low vision, and visual impairment are 152.238 Million. Impaired vision may have negative effects on learning and social interaction, according to Dr. Bjorn. People who are visually impaired cannot be recovered with the help of glasses. This condition affected the reading process's duration and tired the ears. A tool for reading the article is needed to help improve the quality of life for people with low vision (Praveen Sundar, P. V et al., 2020). The level of vision impairment can vary with low vision in each person. Therefore another sensory feature was used by a system built in this work to receive information from a message.The device is designed especially for low vision people. Therefore, they can use this device easily without having to ask others for help, and they can use this tool for educational and intellect skills (Barzilay, R., & Lee, L. 2003).

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