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DEVELOPMENT OF A WEBSITE FOR PERSONALIZED ANALYSIS OF YOUTUBE VIDEOS: PROCESSING AND ANALYTICS BASED ON NEURAL NETWORKS

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Анотація

У цій статті буде розглянуто варіанти використання інформаційної системи для аналізу відео на платформі YouTube з використанням нейронних мереж. Описано основні сценарії взаємодії користувачів із системою, визначено ключові функціональні вимоги та можливості, які вона надає. Розробка таких варіантів використання дозволяє забезпечити структурований підхід до проєктування системи та підвищити її ефективність.

Ключові слова: персоналізований аналіз, YouTube-відео, нейронні мережі, обробка тексту, веб-розробка, аналітика відео.

Abstract

In this article, we will analyze the process of growing grain crops and design a plan for a software application to store information about the processes performed, in which key data will be emphasized. Software development is necessary to achieve maximum efficiency in the management and control of the resource forces of an agricultural enterprise.

Keywords: personalized analysis, YouTube videos, neural networks, text processing, web development, video analytics.

Introduction

Video content has become an integral part of the modern information space, and YouTube is one of the largest platforms for its distribution. However, the large number of videos makes it difficult to quickly obtain and analyze information. Viewers are forced to spend a lot of time watching content that may contain only fragments of useful data [1].

In this regard, there is a need for systems that automate the video analysis process and provide users with structured information in a convenient form. The use of text processing and neural networks allows you to extract key points of the video, analyze the content, and evaluate the author's thoughts.

The study aims to develop a website that will provide personalized analysis of video content, allowing users to quickly get basic information, modify it to suit their needs, and analyze the structure of the opinions presented. This will help optimize the perception of content and increase the efficiency of working with video information.

Results of the study

In today's information environment, video content is one of the most popular and convenient sources of information. However, its analysis and perception can be difficult due to the large amount of content, the length of the video, and the subjectivity of the authors' presentation of information. This is especially true for platforms such as YouTube, where users face the problems of a large amount of content, lack of textual representation, subjectivity of information presentation, and lack of effective tools for personalized analysis. Thousands of hours of video are uploaded every day, making it difficult to find relevant information, and automatically generated subtitles are of low accuracy. Most solutions don't offer in-depth analytics that would help you understand the content of a video without watching it.

The market contains several software products that partially solve these problems. An analysis of existing solutions is presented in Table 1. Most of them, such as YouTube Auto-Generated Subtitles, Otter.ai, Sonix.ai, and IBM Watson Speech to Text, are focused on transcribing audio into text [2]. However, they don't provide personalized video analysis or highlight key points. Some solutions, such as SummarizeBot, can summarize textual information, but do not work directly with video format or have limited algorithm flexibility.

Table 1 - Analysis of software applications

Name of the software application	Functionality	Disadvantages
YouTube Auto-Generated Subtitles	Automatic subtitle generation	Low accuracy, lack of content analysis
Otter.ai	Audio transcription, basic analytics	Lack of adaptation to user needs, paid access
Sonix.ai	Transcription and text editor	Lack of personalized analytics, high price tag
IBM Watson Speech to Text	High accuracy of speech recognition	Lack of structural analysis of the text, requires integration
SummarizeBot	Highlighting key points from the text	Limited support for video formats, low algorithm flexibility

Existing solutions are mostly focused on basic transcription or superficial text analysis, but do not provide a comprehensive approach to personalized video analysis. The proposed approach involves the use of neural networks for deep processing of video content, highlighting key points, assessing the author's tone, and graphically presenting data. This will allow users to quickly get relevant information without having to watch the entire video, which will significantly increase the efficiency of working with video content.

Conclusions.

The analysis of existing solutions has confirmed that there are no full-fledged tools for personalized analysis of YouTube videos on the market that would provide automatic processing of textual content and its deep analytics based on neural networks. This demonstrates the relevance and necessity of developing the proposed website. This solution will be useful not only for ordinary users, but also for researchers, content marketers, and analysts who need effective tools for quick analysis of video content. The use of neural networks will allow highlighting key points, analyzing the author's tone of voice, and presenting the results in a convenient format, which will greatly simplify the perception of information. Thus, the implementation of such a solution will open up new opportunities for fast and high-quality video content analysis.

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