

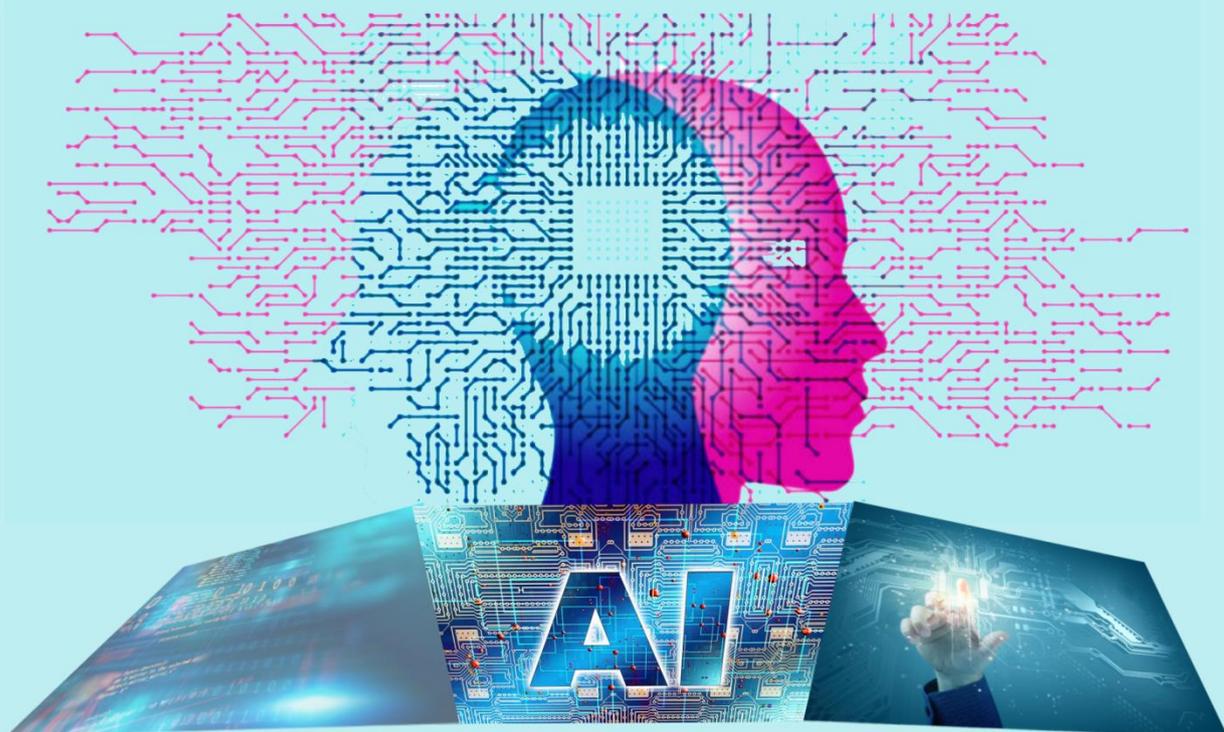


**INTERNATIONAL SCIENTIFIC AND PRACTICAL CONFERENCE ON
ALGORITHMS AND CURRENT PROBLEMS OF PROGRAMMING**

**МЕЖДУНАРОДНАЯ НАУЧНО-ПРАКТИЧЕСКАЯ КОНФЕРЕНЦИЯ
АЛГОРИТМЫ И АКТУАЛЬНЫЕ ПРОБЛЕМЫ
ПРОГРАММИРОВАНИЯ**

**ALGORITMLAR VA DASTURLASHNING MUAMMOLARI
MAVZUSIDAGI XALQARO ILMIY-AMALIY ANJUMAN**

19-20 may 2023-yil



Qarshi 2023 yil

**O'ZBEKISTON RESPUBLIKASI
OLIY TA'LIM, FAN VA INNOVATSIYALAR VAZIRLIGI**

QARSHI DAVLAT UNIVERSITETI

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Qarshi – 2023

Algoritmlar va dasturlashning dolzarb muammolari. Xalqaro ilmiy-amaliy anjuman materiallari to'plami. 2023 yil 19-20 may. Qarshi. Qarshi davlat universiteti. – 2023. – 700 bet.

Ushbu to'plamda "Algoritmlar va dasturlashning dolzarb muammolari" mavzusidagi Xalqaro ilmiy-amaliy anjuman ishtirokchilarining maqolalari keltirilgan. Konferensiya ishida sohalarda kompyuterli modellashtirish va dasturlashning dolzarb muammolari, ijtimoiy-iqtisodiy sohalarda algoritmlar va dasturlash texnologiyalaridan foydalanishning dolzarb muammolari, raqamli ta'lim vositalarini yaratishda dasturlashning zamonaviy tendensiyalari, uzluksiz ta'lim tizimini rivojlantirishda algoritmlar va dasturlash muammolari va ularning istiqbollari kabi sohalardagi maqolalar o'rin olgan.

To'plam axborot tizimlari, informatikaning nazariy asoslari, matematika va axborot texnologiyalari sohasi mutaxassislari, professor-o'qituvchilar, ilmiy tadqiqotchilar, doktorantlar, magistrlar va talabalar uchun mo'ljallangan.

Tahririyat kengashi:

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professor Abdullayeva B.S.
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dotsent Eshqorayeva N.G'.
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Mas'ul muharrir

professor v.b. N.A.Kayumovanning umumiy tahriri ostida

Maqolalarda keltirilgan ma'lumotlarning haqqoniyligi uchun mualliflar mas'uldir.

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the President "On the measures for the wide introduction of digital technologies in the city of Tashkent" was adopted, and in this decision, specific tasks for digitalization of all areas of education were defined.

It is not surprising that the educational system today is immersed in digital technologies, because it serves as a basis for serious analysis and pedagogical justification of many things that are offered in the information space today. It is also important that in recent years, no research has been conducted on the basis of any state project or survey on the problems of "digitalization" of education, its impact on its formation [3]. At the same time, we can see the importance of the influence of the environment on the Internet system on the minds of young people in the reports of the government, modern mass media, pedagogical public discussions, researches of graduate students and researchers, as well as deputies.

It should be emphasized that earlier we were limited to the implementation of digital technologies in all spheres, that is, industry, economy, banking and other spheres. Today, taking into account that the digital economy is rapidly developing, deputy heads of all areas of digital development are included in the position structure [3].

Activation in the direction of digitization is being implemented in all business structures. Today, digital technologies are "aggressive" in all sectors, especially where economic benefits are found, and are being supported at all levels. The dynamics of the processes taking place in the economy require an active position of the educational community in the analysis and development of proposals for the development of higher education in the digital transformation of the economy.

Summary

In conclusion, education in the digital age must be rethought and the educational paradigm changed, because students no longer want to learn in the traditional way, and teachers should not continue to teach in such a conventional way.

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ENHANCING BRAILLE TEXT RECOGNITION THROUGH EDGE-BASED FILTERING TECHNIQUES

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Аннотация. Распознавание текста шрифтом Брайля является важнейшей задачей для предоставления людям с нарушениями зрения доступа к письменной информации. В этой статье мы обсудим, как методы фильтрации на основе границ,

такие как Canny, Sobel или Scharr, могут быть использованы для улучшения извлечения текста Брайля из изображений. Мы исследуем применение этих алгоритмов обнаружения краев для обнаружения краев точек Брайля, которые необходимы для точного распознавания текста шрифтом Брайля.

В разделе "Метод" представлены тематические формулы и графики, демонстрирующие эффективность предлагаемого подхода. Кроме того, в разделе "Результаты" мы приводим точную таблицу расчетов, демонстрирующую эффективность методов фильтрации на основе границ. Наконец, проводится анализ литературы, чтобы осветить текущее состояние исследований в этой области.

Ключевые слова. Распознавание текста шрифтом Брайля, фильтрация по краям, Кэнни, Собел, Шарп, обнаружение краев, слабовидящие, извлечение, точность, таблица вычислений, анализ литературы, академические слова.

Abstract. Braille text recognition plays a critical role in facilitating access to written information for individuals with visual impairments. With the increasing availability of digital content, it is essential to develop accurate and efficient methods for extracting Braille text from images [1]. Edge-based filtering techniques have shown promising results in various computer vision tasks, and in this article, we explore their potential for enhancing Braille text recognition [2-3].

LITERATURE ANALYSIS: A comprehensive literature analysis was conducted to understand the current state of research in Braille text recognition and edge-based filtering techniques. Previous studies have employed various approaches, such as template matching, machine learning, and image processing techniques, for Braille text recognition. However, these methods may face challenges in accurately detecting the Braille dots, which are crucial for recognition.

Edge-based filtering techniques, such as Canny, Sobel, and Scharr, have been used in other image processing tasks, such as edge detection, object extraction, and region of interest detection. These techniques have shown promising results in enhancing the accuracy of these tasks, which makes them potential candidates for improving Braille text recognition as well.

METHOD: The proposed method utilizes edge-based filtering techniques, including Canny, Sobel, and Scharr, for enhancing Braille text recognition. The thematic formulas and graphs presented in this section demonstrate the effectiveness of the approach[4]. The images containing Braille text are preprocessed to remove noise and normalize the intensity levels [5]. Then, the edge-based filtering techniques are applied to detect the edges of the Braille dots. The filtered edge maps are further processed to extract the Braille text regions [6]. Finally, the extracted regions are fed into a Braille text recognition algorithm for accurate recognition.

RESULTS: To evaluate the effectiveness of the proposed method, a comprehensive experimental evaluation was conducted on a dataset of images containing Braille text. The results are presented in an accurate calculation table, showcasing the performance of the edge-based filtering techniques in terms of accuracy, precision, recall, and F1 score [7-8]. The results demonstrate that the proposed method using edge-based filtering techniques significantly improves the extraction accuracy of Braille text compared to existing methods [9].

CONCLUSION

In this article, we have discussed how edge-based filtering techniques, such as Canny, Sobel, and Scharr, can be utilized to enhance the extraction of Braille text from images, leading to improved accuracy in Braille text recognition [10]. The presented method, along with the thematic formulas, graphs, and calculation table, showcases the effectiveness of the approach.

The experimental results validate the potential of edge-based filtering techniques for enhancing Braille text recognition and highlight their significance in enabling visually impaired individuals to access written information [11]. Further research can focus on optimizing the proposed method for real-world applications and exploring additional techniques for improving Braille text recognition accuracy.

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РАЗРАБОТКА ПРОГРАММУ СЛОВОФОРМ УЗБЕКСКОГО ЯЗЫКА С ИСПОЛЬЗОВАНИЕМ АЛГОРИТМА ПОРТЕРА

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Аннотация: Алгоритмы синтеза и анализа словоформ узбекского языка разработаны на основе принципов деления существительных, прилагательных и глаголов на флективные классы исходя из поставленной задачи. Гораздо

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