ТЕХНОЛОГИИ ПЕРЕДАЧИ И ОБРАБОТКИ ИНФОРМАЦИИ

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Title of the article In English (applied style title)

A.a antonov, b.b. borisov (applied style authors)

Belarusian State University of Informatics and Radioelectronics, Republic of Belarus (applied affiliation style)

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**Abstract.** An algorithm for searching for single-pixel extremes of halftone images based   
on centrally symmetric scanning is proposed. It is shown that the algorithm works much faster   
than the best known algorithms for detecting key points of images. (abstract style was applied, word "abstract" in bold)

*Keywords:* local extremum search, centrally symmetric scanning. (keywords style was applied, word "keywords:" in italics)

# Introduction (applied style subtitle)

The search for local extrema is a basic operation for many image processing tasks. Text of articles text of articles text of articles text of articles text of articles text of articles text of articles text of articles text of articles text of articles text of articles text of articles text of articles text of articles text of articles text of articles [1]. Article text article text article text article text article text article text article text article text article text text article text article text article text article text article text article text article text article text article text article text article text article [3-5]. The text of the article the text of the article the text of the article the text of the article the text of the article the text of the article the text of the article the text of the article the text of the article the text of the article the text of the article the text of the article the text of the article. (applied style text of article)

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| --- | --- | --- |
|  |  |  |
| *а* | *b* | *c* |

Figure 1. Representation of image scanning methods: *а* – raster scan;  
*b* – spiral scan; *c* – Block partitioning (applied style caption line)

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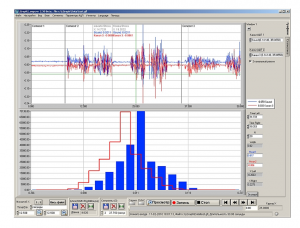


Figure 2. Digital signal processing (applied style caption line)

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1. Beginning of the cycle of searching for local single-pixel extrema.

1.1. Searching for local single-pixel maxima. The matrix of maxima values partitioning is generated  by using the expression

, (1)

(for a formula applied style equation)

where 

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Table 1. Search result of extremums of images with size 512512  
(applied style table head, the word "Table 1." is NOT highlighted in bold)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Methods (table style applied) | Picture | Number of extrema | | | Time, с | Number of comparisons | Memory |
| Amount | Search | Error |
| Straightforward | Lena | 33078 | 23404 | 0 | 0,241 | 9,66 |  |
| Barbara | 32322 | 26233 | 0 | 0,240 | 9,81 |
| Airfield | 47414 | 33876 | 0 | 0,235 | 9,86 |
| Forstner [10] | Lena | 33078 | 23404 | 0 | 0,107 | 4,47 |  |
| Barbara | 32322 | 26233 | 0 | 0,117 | 4,63 |
| Airfield | 47414 | 33876 | 0 | 0,116 | 4,85 |
| Neubeck [9] | Lena | 33078 | 26395 | 1799 | 1,420 | 3,22 |  |
| Barbara | 32322 | 27709 | 1141 | 1,441 | 3,26 |
| Airfield | 47414 | 35097 | 977 | 1,415 | 3,45 |
| Scanline3x3 [13] | Lena | 33078 | 25401 | 602 | 1,043 | <4 |  |
| Barbara | 32322 | 27626 | 548 | 0,993 | <4 |
| Airfield | 47414 | 34573 | 318 | 1,113 | <4 |

# Conclusion (applied style subtitle)

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**СВЕДЕНИЯ ОБ АВТОРАХ (in Russian!)**

|  |  |  |
| --- | --- | --- |
| 1. | Нгуен Ань Туан | – аспирант кафедры инфокоммуникационных технологий БГУИР |
| 2. | Цветков Виктор Юрьевич | – д.т.н., заведующий кафедрой инфокоммуникационных  технологий БГУИР | |