
DETECTING AN OBJECT IN A DIGITAL IMAGE

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Abstract

The investigation deals with a detection algorithm for processing digital images. The purpose of our work is to study and update the algorithm for detecting several objects in a digital image, and also to detect objects of various sizes during automated large-scale digital image processing. We accomplish our objective by scaling the image in question by means of determining maximum points, where the image best resembles the reference image. We experimented with various image formats, investigated the algorithm accuracy in the case of infrared images, and analysed the effects of digital noise and blurring for a large sample of images.

Keywords

Infrared image, algorithm, detection, object, digital image, processing, fragment, face recognition

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References

- [1] Gonzales R.C., Woods R.E. Digital image processing. Boston, MA Addison-Wesley, 2001. 823 p.
- [2] Novikova N.M. Strukturnoe raspoznavanie obrazov [Structural recognition of images]. Voronezh, Voronezh State University Publ., 2008, 30 p.
- [3] Kukharev G.A., Kamenskaya E.I., Matveev Yu.N., Shchegoleva N.L., Khitrov M.V. Metody obrabotki i raspoznavaniya izobrazheniy lits v zadachakh biometrii [Methods of processing and recognition of facial images in biometry tasks]. St. Petersburg, Politekhnika Publ., 2013. 388 p.
- [4] Osnovy raspoznavaniya lits. Habrahabr, 2017. Available at: <http://www.intuit.ru/studies/courses/10619/1103/lecture/18229> (accessed 25.05.2017).
- [5] Eismann K., Duggan S., Porto J. Adobe Photoshop Masking & Compositing. New Riders, 2013.
- [6] Soyfer V.A. Metody komp'yuternoy obrabotki izobrazheniy [Methods of computer image processing]. Moscow, Fizmatlit Publ., 2003. 459 p.
- [7] Tropchenko A.Yu., Tropchenko A.A. Metody vtorichnoy obrabotki i raspoznavaniya izobrazheniy [Methods of secondary processing and image recognition]. St. Petersburg, SPbGU ITMO Publ., 2012. 234 p.
- [8] Murashov M.V., Panin S.D. Raspoznavanie ob'ektov v infrakrasnom diapazone [Recognition of objects in the infrared]. Moscow, MGTU im. N.E. Baumana Publ., 2008. 88 p.

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- [9] Vizil'ter Yu.V., Zheltov S.Yu., Knyaz' V.A., Khodarev A.N. Obrabotka i analiz tsifrovych izobrazheniy s primerami na LabVIEW i IMAQ Vision. Moscow, DMK Press, 2007. 464 p.
 - [10] Prostoy algoritm raspoznavaniya dvizheniya. Available at: <https://habrahabr.ru> (accessed 20.09.2017).

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