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Performance evaluation of automatic number plate recognition on android smartphone platform

(Article)

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Abstract

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Automatic Number Plate Recognition (ANPR) is an intelligent system which has the capability to recognize the character on vehicle **number plate**. Previous researches implemented ANPR system on personal computer (PC) with high resolution camera and high computational capability. On the other hand, not many researches have been conducted on the design and implementation of ANPR in **smartphone** platforms which has limited camera resolution and processing speed. In this paper, various steps to optimize ANPR, including pre-processing, segmentation, and optical character **recognition** (OCR) using artificial neural network (ANN) and template matching, were described. The proposed ANPR algorithm was based on Tesseract and Leptonica libraries. For comparison purpose, the template matching based OCR will be compared to ANN based OCR. **Performance** of the proposed algorithm was evaluated on the developed Malaysian **number plates** image database captured by **smartphone's** camera. Results showed that the accuracy and processing time of the proposed algorithm using template matching was 97.5% and 1.13 seconds, respectively. On the other hand, the traditional algorithm using template matching only obtained 83.7% **recognition** rate with 0.98 second processing time. It shows that our proposed ANPR algorithm improved the **recognition** rate with negligible additional processing time Copyright © 2017 Institute of Advanced Engineering and Science. All rights reserved.

Author keywords

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- 1 Badr, A., Abdel, M.M., Thabet, A.M., Abdelsadek, A.M.
Automatic number plate recognition system

(2011) *Annals of the University of Craiova, Mathematics and Computer Science Series*, 38 (1), pp. 62-71. Cited 12 times.
<http://www.aucms.ro/index.php/ami/article/viewFile/388/351>

- 2 Lakshmi, C.J., Rani, A.J., Ramakrishna, K.S., Kiran, M.K.
A novel approach for indian license plate recognition system

(2011) *International Journal of Advanced Engineering Sciences and Technologies (IJAEST)*, 6, pp. 010-014. Cited 7 times.

- 3 Qadri, M.T., Asif, M.
Automatic number plate recognition system for vehicle identification using optical character recognition




(2009) *2009 International Conference on Education Technology and Computer, ICETC 2009*, art. no. 5169511, pp. 335-338. Cited 37 times.
ISBN: 978-076953609-5
doi: 10.1109/ICETC.2009.54

[View at Publisher](#)

- 4 Hamey, L.G.C., Priest, C.
Automatic number plate recognition for Australian conditions

(2005) *Proceedings of the Digital Imaging Computing: Techniques and Applications, DICTA 2005*, 2005, art. no. 1578112, pp. 87-94. Cited 15 times.
ISBN: 0769524672; 978-076952467-2
doi: 10.1109/DICTA.2005.1578112

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