Deep Learning Approach for Fake Currency Recognition

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Abstract: *In this method, the Automatic fake Currency Recognition System is used to identify fake paper money and determine if it is genuine or not. The current counterfeit issue brought on by demonetization has an impact on the financial system as well as other sectors. This strategy, which is comparatively superior to earlier image processing methods, examines a novel Convolution Neural Network approach for the identification of fake money notes through their images. This approach is based on Deep Learning, which has recently shown outstanding results in image categorization problems. Through the use of an image of the fake money note, this approach can assist both humans and machines in instantly recognizing the note. In this system original and fake notes images are used to perform training and classification operation. The proposed system achieved an accuracy of 99.46% and loss of 0.0033 using CNN algorithm.*

Keywords: CNN, Deep Learning, Fake Currency Detection, Neural Network.

REFERENCES

[1]. Sonali R. Darade, Prof. G. R. Gidveer, "Automatic Recognition of Fake Indian Currency Note", 2016 International Conference on Electrical Power and Energy Systems (ICEPES) Maulana Azad National Institute of Technology, Bhopal, India. Dec 15-16, 2016

[2]. Ingulkar Ashwini Suresh1, Prof. P. P. Narwade, "Indian Currency Recognition and Verification Using Image Processing", International Research Journal of Engineering and Technology (IRJET) Volume: 03 Issue: 06, June-2016

[3]. G. Trupti Pathrabe, Mrs. Swapnili Karmore, A Novel Approach of Embedded System for Indian Paper Currency Recognition, International Journal of Computer Trends and Technology, May to June Issue 2011, ISSN: 2231- 2803.

[4]. Rubeena Mirza, Vinti Nanda, Characteristic Extraction Parameters for Genuine Paper Currency Verification Based on Image Processing, IFRSA International Journal of Computing, Volume 2, Issue 2, April 2012.

[5]. Pathrabe T, Bawane N.G, Feature Extraction Parameters for Genuine Paper Currency Recognition & Verification, International Journal of Advanced Engineering Sciences and Technologies, Volume 2, 85-89, 2011.

[6]. Komal Vora, Ami Shah, Jay Mehta, A Review Paper on Currency Recognition System, International Journal of Computer Applications (0975 8887) Volume 115 No. 20, April 2015

[7]. B. Sai Prasanthi , D. Rajesh Setty, "Indian Paper Currency Authentication System- A Quick Authentication System" International Journal of Scientific & Engineering Research, Volume 6, Issue 9, September-2015 1249 ISSN 2229-5518

[8]. Gouri Sanjay Tele, Akshay Prakash Kathalkar, Sneha Mahakalkar, Bharat Sahoo, and Vaishnavi Dhamane. Detection of fake indian currency. International Journal of Advance Research, Ideas and Innovations in Technology, 4(2):170–176, 2018.

[9]. Naga Sri Ram B Yamini Radha V Rajarajeshwari P Navya Krishna G, Sai Pooja G. Recognition of fake currency note using convolutional neural networks. 4(2):182–186, 2018.

[10]. N. A. J. Sufri, N. A. Rahmad, N. F. Ghazali, N. Shahar, and M. A. As'ari. Vision based system for banknote recognition using different machine learning and deep learning approach. In 2019 IEEE 10th Control and System Graduate Research Colloquium (ICSGRC), pages 5–8, 2019.