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Enriching Auto Image Captcha Generation through AI

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Abstract: There has also been a considerable rise in the burden on numerous websites and web-based apps due to the huge expansion in the volume of the World Wide Web and the variety of subscribers on this network. This load comes from the user's end, resulting in an unanticipated state that leads to undesirable outcomes at the web server's end, such as a breakdown or an information leakage scenario. As a result, hence the necessity to minimize server load as well as the risk of networking assaults, which escalates as the number of users increases. The unintended effects, such as information leakage and server crashes, are produced by two primary factors: first, user overloading, and second, a growth in the volume of autonomous programs or robots. To circumvent the limitations of most traditional techniques to captcha production, this suggested model employs a flexible picture captcha generating methodology. To counteract this impact, we developed a system that generates captcha using a random object insertion mechanism. Convolutional neural networks are used in the presented methodology to effectively generate the captcha. The experimental outcomes have been indicative of the improved performance offered by the proposed approach.

Keywords: Convolution Neural Network, CAPTCHA generation, Image Processing

REFERENCES

- [1]. S. Gao, M. Mohamed, N. Saxena and C. Zhang, "Emerging-Image Motion CAPTCHAs: Vulnerabilities of Existing Designs, and Countermeasures," in IEEE Transactions on Dependable and Secure Computing, vol. 16, no. 6, pp. 1040-1053, 1 Nov.-Dec. 2019, doi: 10.1109/TDSC.2017.2719031.
- [2]. T. Zhang, H. Zheng and L. Zhang, "Verification CAPTCHA Based on Deep Learning," 2018 37th Chinese Control Conference (CCC), 2018, pp. 9056-9060, doi: 10.23919/ChiCC.2018.8482847.
- [3]. N. B. Ardhita and N. U. Maulidevi, "Robust Adversarial Example as Captcha Generator," 2020 7th International Conference on Advance Informatics: Concepts, Theory and Applications (ICAICTA), 2020, pp. 1-4, doi: 10.1109/ICAICTA49861.2020.9429048.
- [4]. T. Kalaichelvi and P. Apuroop, "Image Steganography Method to Achieve Confidentiality Using CAPTCHA for Authentication," 2020 5th International Conference on Communication and Electronics Systems (ICCES), 2020, pp. 495-499, doi: 10.1109/ICCES48766.2020.9138073.
- [5]. S. Ezhilarasi and P. U. Maheswari, "Image Recognition and Annotation based Decision Making of CAPTCHAs for Human Interpretation," 2020 International Conference on Innovative Trends in Information Technology (ICITIIT), 2020, pp. 1-6, doi: 10.1109/ICITIIT49094.2020.9071558.
- [6]. N. Rathour, K. Kaur, S. Bansal and C. Bhargava, "A Cross Correlation Approach for Breaking of Text CAPTCHA," 2018 International Conference on Intelligent Circuits and Systems (ICICS), 2018, pp. 6-10, doi: 10.1109/ICICS.2018.00014.
- [7]. A. Kumar and A. P. Singh, "Contour Based Deep Learning Engine to Solve CAPTCHA," 2021 7th International Conference on Advanced Computing and Communication Systems (ICACCS), 2021, pp. 723-727, doi: 10.1109/ICACCS51430.2021.9441737.
- [8]. H. Weng et al., "Towards understanding the security of modern image captchas and underground captcha-solving services," in Big Data Mining and Analytics, vol. 2, no. 2, pp. 118-144, June 2019, doi: 10.26599/BDMA.2019.9020001.

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- [9]. Y. Hu, L. Chen and J. Cheng, "A CAPTCHA recognition technology based on deep learning," 2018 13th IEEE Conference on Industrial Electronics and Applications (ICIEA), 2018, pp. 617-620, doi: 10.1109/ICIEA.2018.8397789.
- [10]. T. V. Nguyen, Z. Huang, S. Bethini, V. S. P. Ippagunta and P. H. Phung, "Secure Captchas via Object Segment Collages," in IEEE Access, vol. 8, pp. 84230-84238, 2020, doi: 10.1109/ACCESS.2020.2989258.