Automatic Attendance System through Facial Recognition using Deep Learning

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Abstract: *Due to a large number of students in the schools and colleges most of the time teachers are not able to monitor on the attendance of the students. This may create the problems to both students and teachers in the end of the year or semester. The manual handling of all these can take much more effort in making the students to attend the classes regularly and also to intimate their parents on the valid interval of time. So to make this system more efficient and thereby to increase the productivity of the college or the school proposed system uses the automatic attendance system, where the proposed model takes the input from the staff regarding the attendance details and facial images of the students, then the system trains a Convolutional Neural Networks that have been deployed specifically for the facial recognition purpose. This trained model is then utilized for the purpose of achieving the identification of the student's faces through the test image and the decision making approaches for the marking of the attendance. The methodology has been subjected to the evaluation for the accuracy of facial recognition which has resulted in highly accurate outcomes.*

Keywords: Open CV, Convolutional Neural Network, Haar Cascade, Decision Making

REFERENCES

[1]. M. Z. Uddin, W. Khaksar and J. Torresen, "Facial Expression Recognition Using Salient Features and Convolutional Neural Network," in IEEE Access, vol. 5, pp. 26146-26161, 2017, DOI: 10.1109/ACCESS.2017.2777003.

[2]. B. Yang, J. Cao, R. Ni, and Y. Zhang, "Facial Expression Recognition Using Weighted Mixture Deep Neural Network Based on Double-Channel Facial Images," in IEEE Access, vol. 6, pp. 4630-4640, 2018, DOI: 10.1109/ACCESS.2017.2784096.

[3]. Q. Shi, W. Li, F. Zhang, W. Hu, X. Sun and L. Gao, "Deep CNN With Multi-Scale Rotation Invariance Features for Ship Classification," in IEEE Access, vol. 6, pp. 38656-38668, 2018, DOI: 10.1109/ACCESS.2018.2853620.

[4]. H. Wu, K. Zhang, and G. Tian, "Simultaneous Face Detection and Pose Estimation Using Convolutional Neural Network Cascade," in IEEE Access, vol. 6, pp. 49563-49575, 2018, DOI: 10.1109/ACCESS.2018.2869465.

[5]. G. Storey, A. Bouridane and R. Jiang, "Integrated Deep Model for Face Detection and Landmark Localization From "In The Wild" Images," in IEEE Access, vol. 6, pp. 74442-74452, 2018, DOI: 10.1109/ACCESS.2018.2882227.

[6]. Z. Wu et al., "Studies on Different CNN Algorithms for Face Skin Disease Classification Based on Clinical Images," in IEEE Access, vol. 7, pp. 66505-66511, 2019, DOI: 10.1109/ACCESS.2019.2918221.

[7]. M. Z. Khan, S. Harous, S. U. Hassan, M. U. Ghani Khan, R. Iqbal, and S. Mumtaz, "Deep Unified Model For Face Recognition Based on Convolution Neural Network and Edge Computing," in IEEE Access, vol. 7, pp. 72622-72633, 2019, DOI: 10.1109/ACCESS.2019.2918275.

[8]. M. Shi, L. Xu, and X. Chen, "A Novel Facial Expression Intelligent Recognition Method Using Improved Convolutional Neural Network," in IEEE Access, vol. 8, pp. 57606-57614, 2020, DOI: 10.1109/ACCESS.2020.2982286.

[9]. A. Song, Q. Hu, X. Ding, X. Di, and Z. Song, "Similar Face Recognition Using the IE-CNN Model," in IEEE Access, vol. 8, pp. 45244-45253, 2020, DOI: 10.1109/ACCESS.2020.2978938.

[10]. X. Sun, S. Zheng and H. Fu, "ROI-Attention Vectorized CNN Model for Static Facial Expression Recognition," in IEEE Access, vol. 8, pp. 7183-7194, 2020, DOI: 10.1109/ACCESS.2020.2964298.