

Real Time Face Attendance System using Face Recognition

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Abstract: Making Attendance as smarter using recent technology and recognition in deep learning algorithms to build a system that will detect and recognize frontal faces of students in a classroom. —A face is the front part of a person's head from the forehead to the chin, or the corresponding part of animal // (Oxford Dictionary). Face identification is one of the biometric methods to make essential for this system. In human sociable, the front part of face is the most useful data as it contains important data about a group or individual. All person has the skill to identify individuals from their individual faces. The suggested solution is to develop a working model of a system that will promote attendance system in a classroom by recognize the frontal faces of students from a picture taken in a classroom. By making this framework, the problem of intermediary and students being marked present even though they are not physically present can easily be solved. In recent years, research has been taken out and face identification and recognition systems have been developed. Some of which are used on social media platforms, banking apps, government offices, etc. Since face recognition plays a vital role in mobile devices to make it perform and functions on particular operations. Using this idea as a base we make this for smart attendance system and it will spend minimum time than manual attendance. This model will be a successful technique to conduct the attendance and records of students.

Keywords: Convolutional Neural Network (CNN), Deep Learning, MXNet, TensorFlow, Onnx Model, Database, Training and Recognition

REFERENCES

- [1]. T.S. Lim, S.C. Sim, M.M. Mansor, —RFID Based Attendance System || ,2009 IEEE Symposium on Industrial Electronics and Applications (ISIEA 2009), October 4-6, 2009, Kuala Lumpur, Malaysia.
- [2]. S, Kadry; K. Smali, —A Design and Implementation of A Wireless Iris Recognition Attendance Management System || ,ISSN1392 - 124X Information Technology and Control, 2007, Vol.36, No.3.
- [3]. M. K. P. Basheer, C. V. Raghu, —Fingerprint attendance system for classroom needs, || in Proc. India Conference (INDICON).
- [4]. S. Chintalapati; M.V. Raghunadh, "Automated attendance management system based on face recognition algorithms," Computational Intelligence and Computing Research (ICCIC), 2013 IEEE International Conference on, vol., no., pp.1,5, 26-28 Dec. 2013, doi:10.1109/ICCIC.2013.6724266.
- [5]. Nirmalya Kar and Ashim Saha; Study of implementing automated attendance system using face recognition technique unit", Computer Architecture (ISCA) 2017 ACM/IEEE 44th Annual International Symposium on, pp. 1-12, 2017.
- [6]. Dalal, N. and Triggs, B.: Histograms of oriented gradients for human detection. In: IEEE Computer Society Conference on Computer Vision and Pattern Recognition (CVPR). pp. 886–893.(2005).
- [7]. N. Rotem, J. Fix, S. Abdulrasool, S. Deng, R. Dzhabarov, J. Hegeman, et al., "Glow: Graph lowering compiler techniques for neural networks", CoRR, vol. abs/1805.00907, 2018.
- [8]. N. P. Jouppi, C. Young, N. Patil, D. Patterson, G. Agrawal, R. Bajwa, S. Bates, S. Bhatia, N. Boden, A. Borchers et al., "In-datacenter performance analysis of a tensor processing unit", Computer Architecture (ISCA) 2017 ACM/IEEE 44th Annual International Symposium on, pp. 1-12, 2017.

- [9]. T.-Y. Lin, P. Dollar, R. Girshick, K. He, B. Hariharan, and S. Belongie. Feature pyramid networks for object detection. In CVPR, 2017. 1, 2, 4.
- [10]. Howard, A. G., Zhu, M., Chen, B., Kalenichenko, D., Wang, W., Weyand, T., et al.: Mobilenets: Efficient convolutional neural networks for mobile vision applications. CoRR, abs/1704.04861(2017).
- [11]. Schroff, F., Kalenichenko, D., Philbin, J.: Facenet: a unified embedding for face recognition and clustering. In: CVPR (2015).
- [12]. Han, S., Mao, H., Dally, W. J.: Deep compression: Compressing deep neural network with pruning, trained quantization and Huffman coding. CoRR, abs/1510.00149(2015).
- [13]. T.-Y. Lin, P. Goyal, R. Girshick, K. He, and P. Dollar. Focal loss for dense object detection. In ICCV, 2017. 1, 2, 4.
- [14]. G. B. Huang, M. Ramesh, T. Berg, and E. Learned-Miller. Labeled faces in the wild: A database for studying face recognition in unconstrained environments. Technical report, 2007.6.
- [15]. Sun, Y., Wang, X., Tang, X.: Deeply learned face representations are sparse, selective, and robust. In: Computer Vision and Pattern Recognition, pp. 2892–2900(2015).