



Face Recognition using Video and Live Stream a Machine Learning Approach

Madhavi Kulkarni¹, Shraddha Phartade², Sakshi Awhale³, Tanuja Gite⁴,
Tejaswi Sabale⁵, Snehal Telore⁶

Assistant Professor, Department of Computer Science¹

Students, Department of Computer Science^{2,3,4,5,6}

Bhivarabai Sawant Institute of Technology & Research, Wagholi, Pune, Maharashtra, India

Abstract: *One of the top computer vision technologies at the moment is facial recognition. In computer vision, recognising faces is always an extremely challenging process due to lighting, stance, and facial expression. Target objects are tracked by face recognition in live streaming or through video. It is a system application that, in simplest terms, automatically recognises a person from a live capture through camera or video frame. We suggested an automatic face recognition system in this project. When the person in front of the camera recognises him, this application, which is based on face detection, feature extraction, and recognition algorithms, automatically detects the human face. Although the camera is continuously identifying the face in every frame, we employed the Haar cascade classifier to detect human faces. We have utilised the CNN method to train the system using the dataset that is currently accessible, and using real-time face capture, we will store the face data in a database. It was trained using the LBPH recognizer. Face recognition has done through Harr cascade algorithm.*

Keywords: Computer Vision, live streaming, CNN, LBPH Recognizer, Harr cascade

REFERENCES

- [1]. R. Ebrahimpour, N. Sadeghnejad, A. Amiri and A. Moshtagh, "Low resolution face recognition using combination of diverse classifiers," 2010 International Conference of Soft Computing and Pattern Recognition, Paris, 2010, pp. 265-268. doi: 10.1109/SOCPAR.2010.5686495
- [2]. H. Baqeel and S. Saeed, "Face detection authentication on Smartphones: End Users Usability Assessment Experiences," 2019 International Conference on Computer and Information Sciences (ICCIS), Sakaka, Saudi Arabia, 2019, pp. 1-6. doi: 10.1109/ICCISci.2019.8716452
- [3]. P. Dinkova, P. Georgieva, A. Manolova and M. Milanova, "Face recognition based on subject dependent Hidden Markov Models," 2016 IEEE International Black Sea Conference on Communications and Networking (BlackSeaCom), Varna, 2016, pp. 1-5.
- [4]. Z. B. Lahaw, D. Essaidani and H. Seddik, "Robust Face Recognition Approaches Using PCA, ICA, LDA Based on DWT, and SVM Algorithms," 2018 41st International Conference on Telecommunications and Signal Processing (TSP), Athens, 2018, pp. 1- 5. doi: 10.1109/TSP.2018.8441452
- [5]. N. Sabri et al., "A Comparison of Face Detection Classifier using Facial Geometry Distance Measure," 2018 9th IEEE Control and System Graduate Research Colloquium (ICSGRC), Shah Alam, Malaysia, 2018, pp. 116-120. doi: 10.1109/ICSGRC.2018.8657592
- [6]. A. Adouani, W. M. Ben Henia and Z. Lachiri, "Comparison of Haarlike, HOG and LBP approaches for face detection in video sequences," 2019 16th International Multi-Conference on Systems, Signals & Devices (SSD), Istanbul, Turkey, 2019, pp. 266-271. doi: 10.1109/SSD.2019.8893214
- [7]. J. Fan, Q. Ye and N. Ye, "Enhanced Adaptive Locality Preserving Projections for Face Recognition," 2017 4th IAPR Asian Conference on Pattern Recognition (ACPR), Nanjing, 2017, pp. 594-598. doi: 10.1109/ACPR.2017.123



- [8]. Sujata G. Bhele and V.H. Mankar, A Review Paper on Face Recognition Techniques, in The International Journal of Advanced Research in Computer Engineering and Technology (IJARCET) vol 1, Issue 8, October 2012.
- [9]. H. S. Karthik and J. Manikandan, "Evaluation of relevance vector machine classifier for a real-time face recognition system," 2017 IEEE International Conference on Consumer Electronics-Asia (ICCE-Asia), Bangalore, 2017, pp. 26-30. doi: 10.1109/ICCE-ASIA.2017.8307832
- [10]. K. Pearson, "On Lines and Planes of Closest Fit to Systems of Points in Space", Philosophical Magazine 2, 1901, pp 559-572, <http://pbil.univlyon1.fr/R/pearson1901.pdf>.