



“DYNAMIC FACE RECOGNITION”

Komal M. Pidurkar¹, Vijay M. Rakhade², Lowlesh N. Yadav³

Student, Computer Science and Engineering, Shri Sai College of Engineering and Technology Bhadravati, India¹

Assistant Professor, Computer Science and Engineering, Shri Sai College of Engineering and Technology,
Bhadravati, India²

Assistant Professor, Computer Science and Engineering, Shri Sai College of Engineering and Technology,
Bhadravati, India³

Abstract: Facial expression recognition is an essential issue in the field of human and computer interaction. The objective of this paper is to deal with the problem of failure for the feature points on face based on active appearance model (AAM) in fitting with different users. A high quality AAM alignment results rely on appropriate selections of initial positions. In our method, we apply partial AAM fitting on mouth and eyes. To obtain stable partial AAM, we use multi-level optical flow to determine initial position of facial feature models. Then we use the Eigen-faces dynamic face recognition system to recognize different users and select the trained fitting model in recognition with Eigen-face dynamic face recognition. In this paper, we have demonstrated our approach which can accurately recognize different users facial expressions and emotional variation.

INTRODUCTION

In recent years, face recognition has attracted much attention and its research has rapidly expanded by not only engineers but also neuroscientists, since it has many potential applications in computer vision communication and automatic access systems.

Especially, face detection could be a vital component of the face recognition because the initiative of automatic face recognition. However, face detection isn't straightforward because it has many variations of image appearance, like pose variation (front, non-front), occlusion, image orientation, illuminating condition and facial expression.

BACKGROUND

1. Face detection has been a trending topic of computer vision for past few years.
2. It's getting employed in cameras that confirm faces are focused before a picture is taken, at social media sites where people are tagged automatically.
3. ATMs with identify verification and detection software are introduced.
4. Emotion analysis is gaining relevance for research.

FEATURES OF DYNAMIC FACE RECOGNITION

- Can identify multiple faces during a real-time recording.
- Uses a stored database of faces.
- Returns the arrogance of the detected image. Lower confidence value indicates accurate result.
- Is robust and not much sick with light.

SPECIFICATION

❖ Tools and Technology

- Operating System : Windows 7, 32bit
- Hardware : 4GB-RAM, Webcam
- Programming Language : Python
- Computer Vision Library : OpenCV



SOFTWARES

- We used OpenCV-Python to implement the project.
- OpenCV-Python are visiting be a library Python binding designed to unravel computer vision problems.
- OpenCV-Python utilizes Numpy.
- Numpy could even be a highly optimized library for numerical operation with MATLAB-style syntax.
- All the OpenCV array structure are converted to and from Numpy arrays.

THEORY

- ✚ What's a classifier ?
- A bug that decides whether an images are visiting be a positive image (face image) or negative image (non-face image).
- ✚ It's trained on many thousand of face and non-face images to be told the because a extremely unique new images correctly.
- ✚ Open CV provides us with these two pre-trained able to be used classifiers.

EVALUATION

- Full frontal faces is detected and recognized easily.
- The application recognizes persons in real-time video.
- Accuracy reduce with pose variation, change in angles and low resolution.

FUTURE WORK

- ✓ The system is additionally modified to detect and recognize a broader class of faces.
- ✓ Gender classification, happiness index and emotion analysis could even be obtained. (e.g. With beard, changed hair etc.)
- ✓ It is additionally developed further to spot someone even in slight disguise (e.g. with beard, changed hair etc.)

REFERENCE

- [1]. L. N. Yadav, "Predictive Acknowledgement using TRE System Reducing Costs and Bandwidth".
- [2]. V. M. Rakhade, "Reducing Routing Distraction in IP Network using Cross-Layer Methodology".
- [3]. M. H. Miraz, M. Ali, P. S. Excell, "A Review of the Internet of Things (IOT), Internet Technologies and Applications (ITA), pp. 219- 224, Sep. 2015, DOI:10.1109/ItechA.2015.7317398.
- [4]. P. J. Ryan and R. B. Watson, "Research Challenges for the Internet of Things: What Role Can or Play?" Systems, vol 5, no. 1, pp. 1-34, 2017.
- [5]. E. Borgia, D. G. Gomes, B. Lagesse, R. Lea, and D. Puccinelli, "Special issues on Internet of Things: Research challenges and Solutions", Computer Communications, vol. 89, no. 90, pp. 1-4, 2016.
- [6]. S. V. Zanjali and G. R. Talmale, "Medicine Reminder and Monitoring System for Secure Health using IOT", Procedia Computer Science, vol. 78, pp. 471-476, 2016.
- [7]. P. Tadejko, 'Application of Internet of Things in Logistics-Current Challenges", Ekonomia I Zarz{a} dzanie, vol. 7, no. 4, pp. 40-43, 2015.
- [8]. S. Rajguru, S. Kinhekar, and S. Pati, "Analysis of Internet of Things in a Smart Environment", International Journal of Enhanced Research in Man-agement and Computer Applications, vol. 4, no. 4, pp. 40-43, 2015.
- [9]. H. U. Rehman, M. Asif, and M. Ahmed, "Future Applications and Research Challenges of IOT", in 2017 International Conference of Information and Communication Technologies (ICICT), pp. 68-74, dec 201. 7.
- [10]. V. Sundareswaran and M. S. Null, "Survey on Smart Agriculture using IOT", International Journal of Innovative Research in Engineering & Management (IJIREM), vol. 5, no. 2, pp. 62-66, 2015.
- [11]. S. Soomro, M. H. Miraz, A. Prasanth, M. Abdullah, "Artificial Intelligence Enabled IOT: Traffic Congestion Reduction in Smart Cities", IET 2018 Smart Cities Symposium, pp. 81-86, 2018, DOI: 10.1049/cp.2018.1381.
- [12]. R. Jain, "A Congestion Control System Based on VANET for Small Length Roads", Annals of Emerging Technologies in Computing (AETiC), vol. 2, no. 1, pp. 17-21, 2018, DOI: 10:33166/AETiC.2018.01.003.