

Hand Sign/ Gesture Recognition using Deep Learning

Shree B¹, Pavithra B² and Dr. M. Preetha³

Student, Department of Information Technology^{1,2}

Professor, Department of Computer Science and Engineering³

Prince Shri Venkateshwara Padmavathy Engineering College, Chennai, Tamil Nadu

Abstract: *In this paper, we focus on using pointing behavior for a natural interface, Hand gesture recognition-based human-machine interface is being developed vigorously in recent years. Due to the effect of lighting and complex background, most visual hand gesture recognition systems work only under restricted environment. To classify the dynamic hand gestures, we developed a simple and fast motion history image-based method. In recent years, the gesture control technique has become a new developmental trend for many human-based electronics products. This technique let people can control these products more naturally, intuitively, and conveniently. In this paper, a fast gesture recognition scheme is proposed to be an interface for the human-machine interaction (HMI) of systems. This paper presents some low-complexity algorithms and gestures to reduce the gesture recognition complexity and be more suitable for controlling real-time computer systems using Convolutional Neural Networks*

Keywords: Hand gesture recognition, Human computer interaction, Convolutional Neural Network, Gaussian Function

REFERENCES

- [1] D. K. Vishwakarma, R. Maheshwari and R. Kapoor, "An Efficient Approach for the Recognition of Hand Gestures from Very Low-Resolution Images," 2015 Fifth International Conference on Communication Systems and Network Technologies, 2015, pp. 467-471, doi: 10.1109/CSNT.2015.84.
- [2] C. Wang and S. C. Chan, "A new hand gesture recognition algorithm based on joint color-depth Superpixel Earth Mover's Distance," 2014 4th International Workshop on Cognitive Information Processing (CIP), 2014, pp. 1-6, doi: 10.1109/CIP.2014.6844497.
- [3] S. N. Sawant and M. S. Kumbhar, "Real time Sign Language Recognition using PCA," 2014 IEEE International Conference on Advanced Communications, Control and Computing Technologies, 2014, pp. 1412-1415, doi: 10.1109/ICACCCT.2014.7019333.
- [4] C. Wu and C. H. Lin, "Depth-based hand gesture recognition for home appliance control," 2013 IEEE International Symposium on Consumer Electronics (ISCE), 2013, pp. 279-280, doi: 10.1109/ISCE.2013.6570227.
- [5] T. -H. Tsai and Y. -R. Tasi, "Design and implementation of a 3D hand gesture architecture system under complicated environment," 2017 International Symposium on VLSI Design, Automation and Test (VLSI-DAT), 2017, pp. 1-4, doi: 10.1109/VLSI-DAT.2017.7939643.