

Hand Gesture Recognition using Deep Convolutional Neural Networks

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Abstract. Hand gesture recognition is the process of recognizing meaningful expressions of form and motion by a human involving only the hands. There are plenty of applications where hand gesture recognition can be applied for improving control, accessibility, communication and learning. In the work presented in this paper we conducted experiments with different types of convolutional neural networks, including our own proprietary model. The performance of each model was evaluated on the Marcel dataset providing relevant insight as to how different architectures influence performance. Best results were obtained using the GoogLeNet approach featuring the Inception architecture, followed by our proprietary model and the VGG model.

Keywords: gesture recognition, computer vision, convolutional neural networks, deep learning, Inception architecture, GoogLeNet