ACKNOWLEDGEMENT

I own my heartfelt gratitude to **GOD ALMIGHTY** for all the blessings showered on me during the course of this seminar

I express my whole hearted thanks to the Management of the College**, Dr. S. Basant**, Chairman, UKFCET, for providing me an opportunity to do studies in this Esteemed Institution.

I would like to express deepest appreciation towards **Mr. Aneesh V N**, Principal for providing the facilities for the studies and constant encouragement in all achievements.

I sincerely thank **Dr. Ramani K**, Head of the Department for providing necessary information regarding the Seminar and also her support in completing it.

I also thank my project Co-ordinators**, Mr. Jithin Jacob**, Assistant Professor in Computer Science and Engineering Department who gave expert supervision, encouragement and constructive criticism amidst his busy schedule throughout the seminar.

I indebted to my guide **Ms. Remya Shaji**, Assistant Professor in Computer Science and Engineering who gave valuable suggestion and also guidance in preparing this seminar report.

At last I express my sincere heartfelt gratitude to all the staff members of Computer Science and Engineering Department who helped me directly or indirectly during this course of work.

Akhil A

ABSTRACT

In recent years, human–computer interaction behaviour has appeared more and more in daily life. Especially with the rapid development of computer vision technology, the human centred human–computer interaction technology is bound to replace modern day computer-centred interaction technology. The study of gesture recognition is in line with this trend, and gesture recognition provides a way for many devices to interact with humans. The traditional gesture recognition method requires manual extraction of feature values, which is a time-consuming and laborious method. In order to break through the bottleneck, the implementation of a gesture recognition algorithm based on the convolutional neural network is applied. I apply this method to expression recognition, calculation, and text output, and achieve good results. Through this experiment, my aim to show that the proposed method can train the model to identify gestures with fewer samples and achieve better gesture classification and detection effects. Moreover, this gesture recognition method is less susceptible to illumination and background interference. It also can achieve an efficient real-time recognition effect through which gesture translation for the intended mute populace aid without third party intervention for their ease of living.

LIST OF FIGURES

ABBREVIATIONS

2D	Two-Dimensional
ASL	American Sign Language
ASLR	American Sign Language Recogniser
CNN	Convolutional Neural Network
HSV	Hue, Saturation, Value
MLP	Multi-Layer Perceptron Neural Network
NN	Neural Network
OpenCV	Open Source Computer Vision Library
ReLU	Rectified Linear Unit
RGB	Red-Green-Blue
SIFT	Scale-Invariant Feature Transform
TTS	Text To Speech