# ABSTRACT

Eyesight is one of major senses for all the beings. Eye is unlike other parts of our body, as a lot can be read from the expression or position of eyes. Generally everyone focuses or looks at the person with whomever they are interacting, without even calling by their name. This is called Human-human interaction. Personal computers play vital role in our daily lives, as they are utilized in various fields such as work, entertainment, education and many more. The input method for all these applications is using mouse and keyboard. There is no problem for individual with forelimbs in using mouse and keyboard. But it is insuperable for the individuals without limbs. New devices need to be designed for these people. Analogous to Human-human interaction, Human-computer interaction (HCI) is possible by tracking position of eyes. Thus, Eye tracking is hopeful technology for HCI. Eye Trackers measure the direction in which our eyes are pointed and predict our gaze points. These gaze points or eye position are useful for HCI.

In this project, eye has been tracked using a novel method by considering pupil and using Fuzzy logic. Eye gestures are the different positions of pupil. Five eye gestures, look up, look down, look straight , look right and look left have been considered for working and five letters A,E,I,O,U are assigned to them respectively. Eye gesture made by the user is captured by the web-cam and stored as an image, which is processed to obtain region of interest (i.e. pupil). Later, feature is extracted to obtain feature values. These values are used as input to the ‘Fuzzy logic unit’, which recognizes the eye gesture. Alphabet and direction sign pre-assigned to the particular gesture is displayed as output, along with pre-assigned audio announcing the direction.