**INTRODUCTION**

**1.1. Motivation**

Iris recognition can be used for biometric (e.g. owner identification) and soft biometric (e.g. demographic identity).

The main motivation for this project is to provide a better way for identification of humans and their demographics. It also offers more efficiency because it is harder to steal or replicate human eyes than it is for fingerprints and other biometric features.

**1.2. Aim & Objectives**

The main aim of this project is to acquire identity and their demographic information by analyzing their eyes (iris).

The objectives are:

1. Get eye data from a database.
2. Get the geographical and texture features from the eye.
3. Use the features acquired to retrieve the identity and demographic data.

**1.3. Methodology**

The project will be done in two parts: image processing part and machine learning part.

The image processing part will be achieved using the following methods:

1. Acquiring the eye image from the database.
2. Segmentation of the eye image to retrieve the required parts of the eye (iris and pupil).
3. Feature extraction which will entail extraction of both geometric and texture features from the segmented part.
4. Feature correlation which is the removal of the unwanted and redundant features acquired from feature extraction.

The machine learning/deep learning part will use the methods below:

1. Classification of data acquired into relevant categories.
2. Prediction and learning – the system will have to learn and output the correct data (identification and geometric data) from the classification step above.