# Organ Donor Identification System

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**Abstract**— Transplantation of human organs from one human being to another is one of the greatest medical breakthroughs of the country. In this paper, we are proposing a donor identification system to recognize the donors based on face recognition or through an Identification number. A centralized repository is maintained by the hospitals to store the required information of a donor which includes thumb impression, facial images and other basic details of the donor. In case of accidental death, the donor will be checked in our portal for verification about his organ donation and informed to the guardian. The process of taking the organ before the stipulated prescribed medical time will be initiated. In case of normal death, the person's address and reference number will be checked and based on that, the organs will be taken with a formal confirmation from their guardian. This project focuses towards a full-fledged portal to register for organ donation, organ requisition and hospital details.

**Index Terms**— Transplantation,Donors,thumb mpression,Facial image.

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## 1 INTRODUCTION

Organ transplantation is the moving of an organ from one body to another or from a donor site on the patient's own body, for the purpose of replacing the recipient's damaged or absent organ. The emerging field of regenerative medicine is allowing scientists and engineers to create organs to be regrown from the patient's own cells (stem cells, or cells extracted from the failing organs). Organs and/or tissues that are transplanted within the same person's body are called auto grafts. Transplants that are recently performed between two subjects of the same species are called allograft. Allograft can either be from a living or cadaveric source.

Organs that can be transplanted are the heart, kidneys, liver, lungs, pancreas, intestine, and thymus. Tissues include bones, tendons (both referred to as musculoskeletal grafts), cornea, skin, heart valves, and veins. Worldwide, the kidneys are the most commonly transplanted organs, followed closely by the liver and then the heart. The cornea and musculoskeletal grafts are the most commonly transplanted tissues; these outnumber organ transplants by more than tenfold. Since lot of people is dying without donors of organs and also to improve the fast communication of organ donation we are going for computerized format for organ donors.

Organ donors will provide their preferences when donating the organs. The organ donors will fill into the application and register for the organ donation. Once the donor's disappear. The organs will be taken from the donor and it will safeguarded by the hospitals.

Currently Delhi State Health Department had launched Website (www.dorso.org) for organ transplantation.

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DORSO is an acronym that stands for Deceased Organ Re trieval Sharing Organization. This is an autonomous and recognized agency for the Delhi State Deceased Organ Retrieval Transplant Authority. It has a specific role to monitor, evaluate, appraise and disseminate to the Delhi State Health Department on the periodic status of implementation of the cadaver program.

Organs get from a living or dead person to a living recipient in need of a transplantation. Transplantable organs and tissues are removed in a surgical procedure following a determination, based on the donor's medical and social history, of which are suitable for transplantation. A facial recognition system is a computer application for automatically identifying or verifying a person from a digital image or a video frame from a video source. One of the ways to do this is by comparing the image of a person with images already stored in the database.

This paper will continue as follows. First, in section 2 background information on past work of organ donor will be discussed. Then, in section 3 deals with construction of proposed architecture is examined in detail. Next, in section 4 the results of web design are given. Finally, in section 5 future works is discussed and concluding remarks made.

## 2 Proposed Architecture

In the proposed system, To overcome the issue of wasting the organs the donor's identification will be taken in a multi variant approach. Donors photograph of the image and a unique identification number is one way of identification. Once the user is met with the accident, the donor's face will be recognized by the nearby hospitals and the information about the user will be retrieved. The retrieved information will be matched to identify whether the person is a donor or not. Next level is an authentication number which will be provided during registration of the user.
Form

## 3.1 LOGIN

This module is the initial module of the project for the purpose of authentication Hospital Management creates a particular login for donors. Login modules includes basic attributes like username and password.

## 3.2 REGISTRATION

This is the second module after secure login of the user of the hospital management. Registration of donor is made in this module by the user of the hospital management in a centralized repository. The Details of registration includes the basic information, Guardian Information and Organ information

Basic information of the donor to be registered is Name, Age, Date of birth and Blood group. Guardian Information of the donor is the Name and contact details of the guardian of the particular donor to whom the hospital management passes the information if the donor is subjected to death.

Organ information of the donor should contain the organ name which the donor wishes to donate. These details are registered in this module by the user of the hospital after secure login.

## 3.3 DONOR SEARCH

This is the third module of this project, where the donor are searched using some categorization. If the hospital is in need of donor, search will be made in the centralized repository of donors.

Categorization of donor search is,

1. Face Recognition Technique
2. Thumb Impression Technique
3. Unique Identification Technique

These categorization crafts the donor search more efficient to find out the donor in the centralized repository if the search is successful, then the details of the particular donor will be fetched in the system.

## 3.4 FACE RECOGNITION TECHNIQUE

Fractal code based Face Recognition Technique:

It is shown that candidate images of face recognition system could be recognized, efficiently, using interdependence of pixels arising from fractal codes (IFS) of images. The interdependence of the pixels is inherent within the fractal code in the form of chain of pixels.

The mathematical principal behind the application of fractal image codes for recognition is, An Image Xf can be represented as $Xf = A \times Xf + B$, where A and B are fractal parameters of image Xf. Different fractal codes can be presented for any arbitrary image. With the definition of a fractal Transformation.

$$T(X) = A (X- Xf) + Xf$$

## 3.5 THUMB IMPRESSION TECHNIQUE

A fingerprint in its narrow sense is an impression left by the friction ridges of a human finger. In a wider use of the term, fingerprints are the traces of an impression from the friction ridges of any part of a human or other primate hand. A print from the foot can also leave an impression of friction ridges. A friction ridge is a raised portion of the epidermis on the digits (fingers and toes), the palm of the hand or the sole of the foot, consisting of one or more connected ridge units of friction ridge skin.
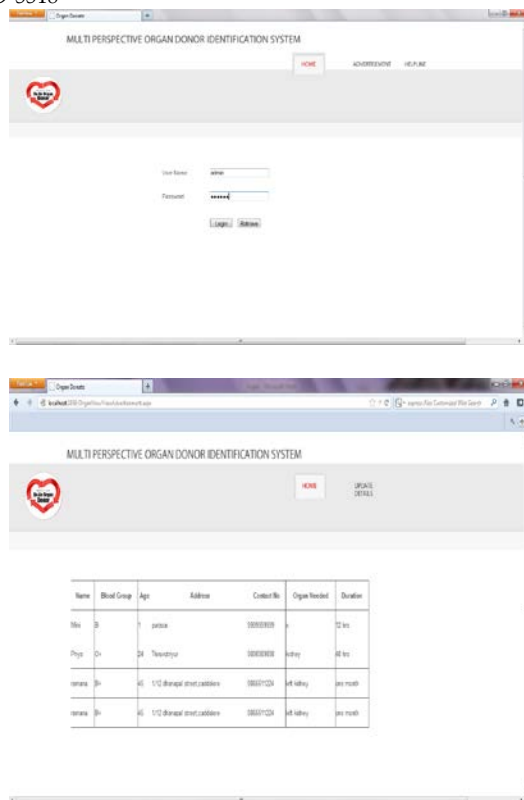
*Unique Identification Technique*

Unique Identification number technique is the one of the search categorization. It uses the indexing number from the database generated during the process of donor details registration. This identification crafts the search efficiently to retrieve details from the centralized database.

## 4. EXPERIMENTAL RESULTS

In this paper, a manual evaluation of the ontology was performed. All 5,498 verb concepts were examined to determine if they were indeed affective verbs and were in the correct place in the ontology. The manual evaluation found that all verbs were indeed affective and in the correct place. This was to be expected as the creation process used a controlled knowledge source, WordNet, which allowed an errorless extraction of the emotion ontology. Then classified the emotion according to the emotional class the sentence belongs.

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## 5. Conclusions and Future Work

In this paper, **we** implemented organ donation applications in systematic way and it is published through internet to all hospitals. To recognize the organ donor we are using three identification models such as thumb impression, facial image and identification number. It is mainly used in case of any accident. In future this application can be implemented for our medical related application "Multi Perspective Organ Donor Identification System" will reduces death rate since we are getting details of organ donor in time.

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