Basic Details of the Team and Problem Statement

Ministry of Defence:

PS Code: SIH1422

Problem Statement Title: Identification of victim buried under avalanches

Team Name: Life Defender

Team Leader Name: Vikram Kumar

Institute Code (AISHE):6133

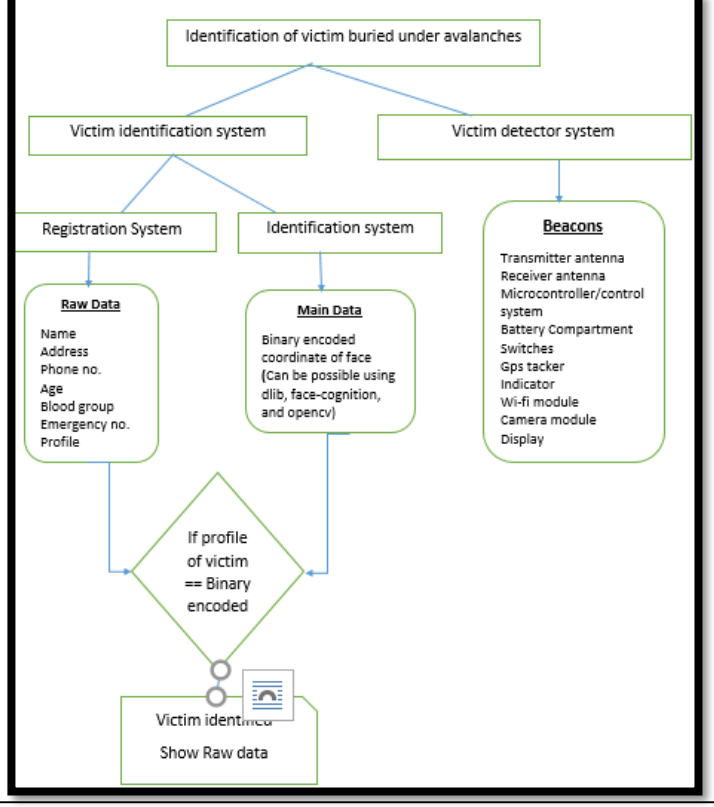
Institute Name: Techno Main Salt Lake

Theme Name: Identification and Avalanche Victim Detector

Idea/Approach Details

Idea/Solution/Prototype :

- The proposed solution is a registration system that stores victim data in two parts: raw data (including name, age, blood group, phone number, emergency contact, and profile) is stored in a database. Simultaneously, a victim detection system processes a victim's face, generates binary-encoded coordinates, and matches them with the profile image. If there's a match, all victim details are displayed for identification.
- On the other side we have a **beacon**, that will transmit and receive signal and helps to detect the victim buried under, It will also have for alert message and detection. **GPS tracker and sensor**
- This all will we be in implanted in a **single device**.



Technology stack:

- **React**
- **Database**
- **Python** (with different module)

Cmake, dlib, face-recognition, cvzone, opencv-python

Micro-controllers, sensors, transmitters , Camera module, wi-fi module.

Idea/Approach Details

Use Cases

- **Avalanche Search and Rescue:** In the event of an avalanche, the victim detection system can use facial recognition to identify buried individuals and transmit their locations to rescue teams.
- **Disaster Response and Recovery:** During natural disasters like earthquakes or building collapses, the system can assist first responders in quickly locating and identifying victims under rubble, improving the efficiency of rescue operations.
- **Missing Persons and Abductions**
- **Industrial Accidents**
- **Search and Rescue in Wilderness**
- **Natural Disaster Evacuations**
- **Border Control and Security**
- **Smart City Infrastructure**

Dependencies and Challenges

- **Dependencies:**

1. Hardware Components
2. Software Libraries and Frameworks
3. Data Storage and Database
4. Networking and Communication
5. Facial Recognition Accuracy
6. Battery Life and Power Supply
7. Regulatory and Privacy Compliance
8. Integration with Emergency Services

- **Challenges:**

1. Data Security Breaches
2. False Positives and Negatives
3. Hardware Failures
4. Reliability and Availability
5. User Adoption and Training
6. Scalability

Team Member Details

Team Leader Name: Vikram Kumar

Branch : Btech | Stream: CSE | Year : IV

Team Member 1 Name: Mandira Chakrborty

Branch: Btech | Stream: CSE | Year : IV

Team Member 2 Name: Julee Singh

Branch : Btech | Stream : CSE | Year : IV

Team Member 3 Name: Soumydeep Banerjee

Branch : Btech | Stream : ECE | Year : IV

Team Member 4 Name: Payel Chaudhuri

Branch : Btech | Stream : CSE | Year : III

Team Member 5 Name: Reetam Dutta

Branch : Mtech | Stream : CSE | Year : II

Team Mentor 1 Name: Dr. Atrayee Gupta

Category (Academic/Industry): | Expertise (AI/ML/Blockchain etc): | Domain Experience (in years):