

Identification of Lost Person/Criminal/If Any Based-On Internet of Things (IOT) And Deep Learning Techniques

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ABSTRACT

The scheme is planned to recognize the lost person or any former individual person based on the condition of the user. The lost person can be recognized robotically without human interference by utilizing the artificial intelligence algorithms and deep face sections. The scheme will accumulate the figures from varies camera and kept in the server, the figures that accumulated at the interval of acquiescent will be matched to the figures that taken from the camera by using the predefined algorithms and the precise match may found. After the match found nearby alarm will be alerted then Short Message Service will be directed to the matching mobile numbers worldwide.

Keywords: Sensors, Monitoring, Image verification, Log Maintenance, Smart device, Internet of Things, Missing Person.

1. Introduction

The present innovation associates to a system/product which can be used to identify the lost person/if any based on the technologies of Internet of Things (IoT) and deep learning algorithm deep face [11-15]. Here the camera is equipped with connectivity technologies like Wi-Fi/ if any along with the GPS sensor to know the exact location and to communicate the captured data into the server. In the server the deep face algorithm was used to analyze the captured data and predefined data, if match found sends and the alarm and messages to the corresponding mobile numbers [9-10].

2. Prior Art

The Patent US20180046855A1 disclose the invention to detect the face from the digital image. The method of utilizing the data of the crime person while discharging by transforming the data from one place to other place if any incident occurs was disclosed in patent US9159111B2. The patent US20150243165A1 provides a system to use the GPS system, radio signals, and cellular networks to deal with the traffic related issues, here provides a various units like police vehicle unit, emergency vehicle unit, roadside interaction unit and vehicle unit. The patent US20190174287A1 describes a geo location system based, crowd sourced based enhancing personal safety system. Here the person can their personal location. In the patent US8566023B2 disclosed about missing child report, tracking and recovery method and system [1-8].

3. Proposed Design

The principal object of the present invention is to identify the missing (lost) person/if any by using the IoT enabled camera with the deep face technologies. The camera will collect the video to the cloud/ database, in the database the deep face algorithm will be used to match the images that predefined with the extracted images in the server. Once similarities matched alarm will get locally and Short Message Service will be sent to the tallying mobile numbers.

The scheme is to measure the lost or if any person builds on the user condition. Once the person will give compliant to the police people regarding the missing person if any the details will be collected from them and stored in the cloud/server. The detail may be mobile number to send SMS, different images of the missing person.

The camera that equipped with the GPS sensor and internet will collect the sequence of images from the various places that installed the camera, the places may be like railway station, police station, etc. the data coming from that device were stored in the cloud/server.

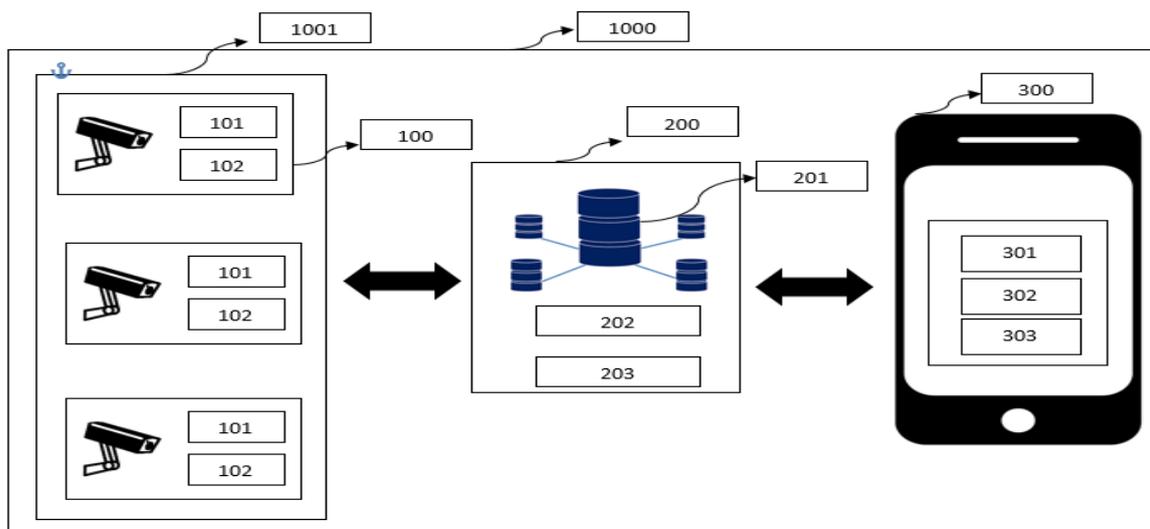


Fig. 1 demonstrates a plan of the whole planned system

On the stored data that captured from cameras will automatically match with the images that already existing in that server, if match found, will get an alarm and details will send to the corresponding mobile numbers given at the time of the compile

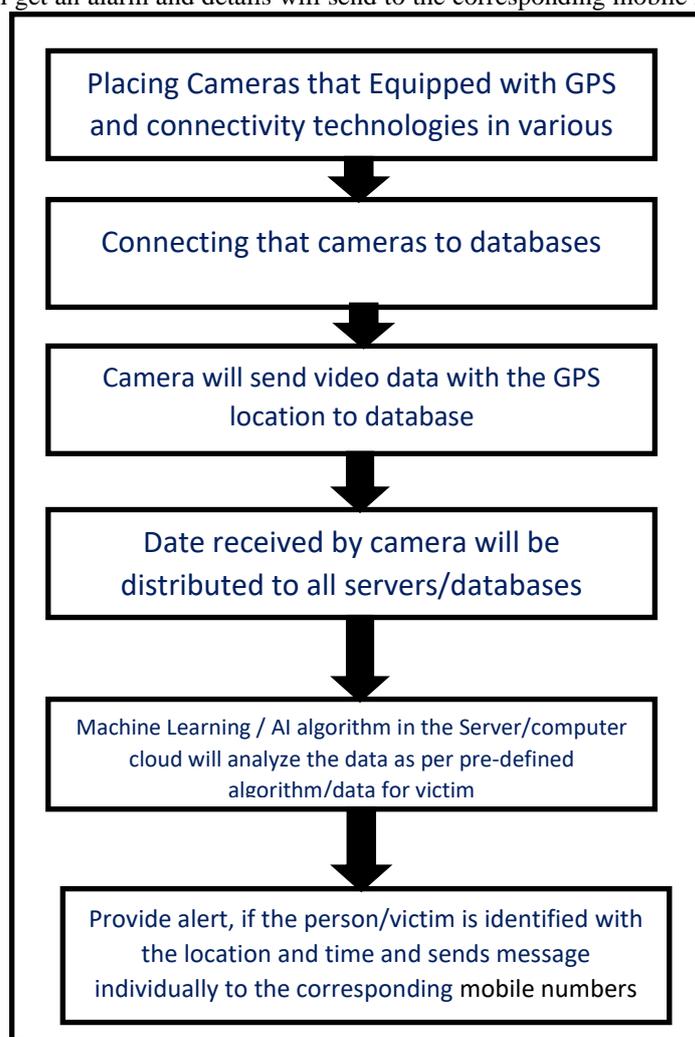


Fig.2 demonstrates a plan flow of the planned system which indications the process flow steps.

The overview of the present innovation, as well as the complete depiction, is well understood when read in combination with the associated depictions that demonstrate one or more possible examples of the existing innovation, of which:

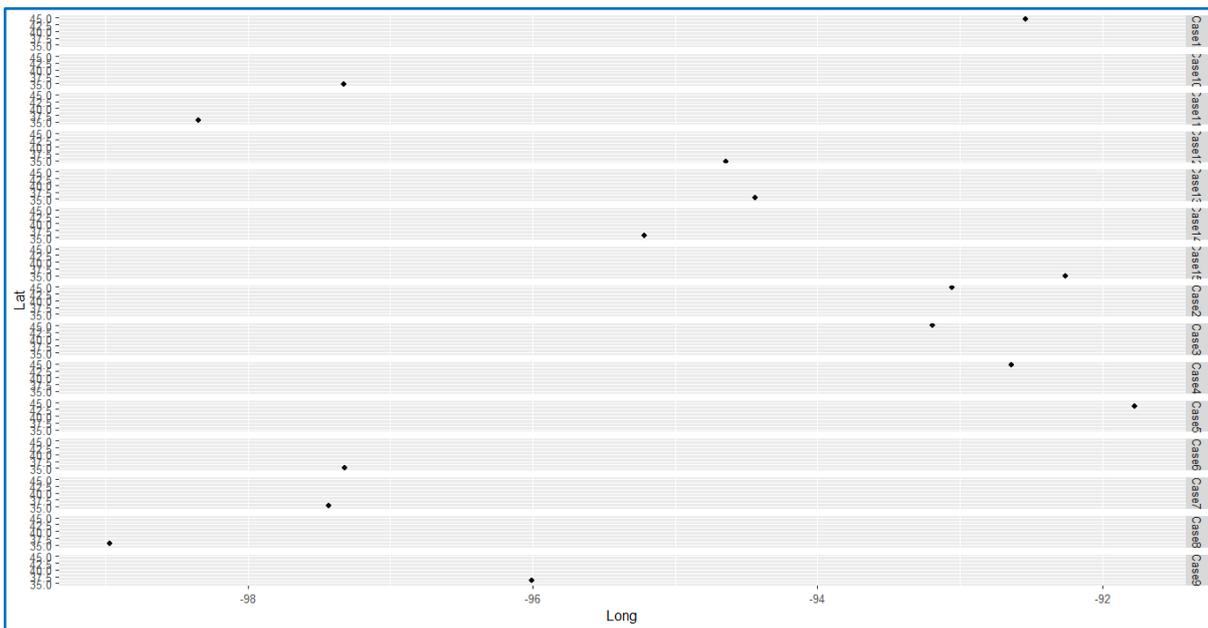
Fig.1 demonstrates a plan of the complete planned scheme which shows the constituents such as the camera equipped with the internet and GPS sensor, Cloud/server and Mobile phone.

Fig.2 demonstrates a plan flow of the planned system which indications the process flow steps.

4. Working Principle

The scheme is planned to recognize the lost person or any other required person based on the customer requirement.

Fig. 1 demonstrates a plan of the whole planned system which shows the constituents such as the camera



equipped with the internet and GPS sensor, Cloud server and Mobile phone.

The product/System consists of the cameras (1001), the camera (100) is equipped with the GPS Sensor (101), Internet (102) to know the exact location and to send the captured video/image to the cloud /centralized databases (200). The database/ cloud (201) used to store the data of the user and the data that captured from the cameras. It consists of the AI algorithms (202) to analyse the data and the deep face algorithm (203) to catch the missing person after matching with the predefined data that collected during the time of taken the complete from the user.

One the match found the data will go to the corresponding mobile phone numbers. The data may be the GPS location (301), missing person name (302). The short message service will be sent by using the IFTTT (303) technology.

Fig.2 demonstrates a representation flow of the planned scheme which displays the process flow steps.

5. Results

Implementation of the project is claiming on the basis of data considered for different cases in which each case will provided the description in the form of details of the case followed by Longitude and Latitude of the missing case.

Fig.3Quick plot for cases vs Longitude vs Latitude

The following are the claims:

1. A system/Product for identifying the lost person or any other required person built on the user condition by using the IoT and AI and Deep face technologies. This scheme/product comprises:

- a. Consists of Microcontrollers like Node MCU/Raspberry pi to upload the programs based on the user need. Consists of sensors (GPS), connectivity technologies, Camera, actuators and other electronic components as mentioned above.
 - b. Can connect this product to central server or computer or cloud to that receives and stores the information from the sensor.
 - c. Connectivity technologies (Bluetooth and Wi-Fi) that connected to the microcontroller to communicate sensed data to the users globally via mobile SMS
 - d. Can be used alarm for match found locally.
 - e. Data is communicated remotely with the mobile via SMS for remote monitoring with the product.
 - f. Artificial algorithms and Deep face were used in the server to analyze the data and to provide the solution automatically.
2. The program according to claim 1 can be uploaded based on the user requirements that coded in python or c language.
 3. The sensors according to claim 1 are selected from analog or digital sensors.
 4. The sensors/microcontrollers according to claim 1 transmit the data to the central server or computer or cloud through communication protocols such as Bluetooth or Wi-Fi with Internet Connection.

A sample 15 records (cases) are represented in the quick plot, which shows Longitude and latitude of the case. Once the case found in a particular location, automatically a message will be send to the corresponding case holder mobile number.

6. Conclusion

The principal object of the present invention is to identify the missing (lost) person/if any by using the IoT enabled camera with the deep face technologies. The camera will collect the video to the cloud/ database, in the database the deep face algorithm will be used to match the images that predefined with the extracted images in the server. Once similarities matched alarm will get locally and Short Message Service will be sent to the tallying mobile numbers.

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