

IMAGE PROCESSING BASED ADVANCES INTELLIGENT TRAFFIC CONTROLLING AND MONITORING SYSTEM USING INTERNET OF THINGS

Sanket. C. Mungale¹, M. Sankar²

¹PG Student,AMGOI ,Kolhapur,Maharashtra, India.

²Professor, Faculty of Engineering, AMGOI , kolhapur,Maharashtra,India.

Abstract: Twenty one century management and management system analysis technique is most important work to public life ,because all time this traffic management services is program to provides sensible service for individuals, several people used their longer in journey in day to day life ..So computer science and deep learning methodology presently a days most popular technique, in several country has searches that kind resolution, now additional country developed this methodology victimization next generation network technology, becomes plenty of reliable to manmade hand management. In all traffic management some extremely acknowledged railway line city, most national ways in which, in traffic management is in addition higher service based totally as a results of longer overwhelming and plenty of labor is required. Some traffic management in very important to analysis traffic result. At low price system that is high resource is wish feature image of observation house; vehicle detection and chase profess of the pictures estimation it slow. whereas is in addition designed based totally real time traffic and management management ,at priority of lane has been allotted some have an effect on demand ,when vehicle is not at day ,night et

Keywords: traffic system summary, new traffic innovation, web of things conception summary, deep learning methodology, country traffic system management summary.

1. INTRODUCATION:

In traffic management analysis that's additional strong work. In following traffic signal is additionally a short time recommendation for user that I would like time to control their traffic behaviour. We'd presumptively long-face Accident on highways attributable to lack data rmation and road info ,so naturally self-work vehicles is ought to care of road the traffic signal work .historical commonplace laptop computer vision camera based traffic image capture and whole analysis that's best resolution for real time overwhelming model. twenty one century management and management system analysis technique is most important work to manmade life ,because all time this traffic management services is program to provides good service for people, several folks used their longer in journey in day to day life .so engineering and deep learning technique presently a days most well-liked technique ,in several country has searches that kind resolution ,now tons of country developed this technique victimization next generation network technology, becomes tons of reliable to manmade management altogether traffic management some very putative railway line town, most national ways in which within which , in traffic management additionally higher service based as a results of longer, overwhelming and tons of labor is required. .so analysis is in addition in many paper review and technology careful in addition we tend to tend to in addition required basic survey ,it is

important several country like world region that is samples of Asian pacific region ,gulf country, Europe region is in addition work on this Some major railway line city of state has in addition face this downside like city ,Delhi, Chennai ,Bangalore ,pune. So traffic police management has developed check of presidency of geographic area that's tons of advance innovation for traffic signal management. As a result of all state has been minor modification the traffic management system to bother free road journey. .In trendy life we've to face with several issues one amongst that is holdup changing into additional serious day once day. It's aforementioned that the high book of vehicles, the scanty infrastructure and also the irrational distribution of the event area unit main reasons for increased hold up. The foremost cause resulting in hold up is that the high range of car that was caused by the population and also the development of economy.

To unravel this downside, the got ought to encourage individuals to use transport or vehicles with tiny size like bicycles or build tax on personal vehicles. Significantly, in some Asian countries like Viet Nam, the native authorities passed law limiting to the quantity of vehicles for every family.

The strategies mentioned on top of is absolutely economical indeed. That the inadequate infrastructure cannot handle the problem of traffic is additionally a decisive reason. The general public conveyance is obtainable and its quality is extremely dangerous, principally within the establishing countries. Besides, the route and roads area unit incapable of meeting the necessity of skyrocketing range of car. Rather than functioning on roads to accommodate the growing traffic numerous techniques are devised to regulate the traffic on roads like embedded controllers that area unit put in at the junction.

2: OVERVIEW OF IOT CONCEPT IN TRAFFIC MANAGEMENT SYSTEM.

Last few Decades the traffic management it's the important problems in an exceedingly massive cities. With the assistance of net of Things (IoT) we are able to improve the traffic potency. during this we have a tendency to describe the items victimization net to regulate the traffic well previous couple of year the main drawback is increasing range of vehicles as same as growth of population thanks to it causes major tie up, noise and increase travel time thanks to this congestion of traffic is will increase at the side of increase pollution a day on road traffic is jam- pawn cked. . During this we have a tendency to will manage the traffic signals by observation the traffic density to avoid tie up on road victimization network communication between server and hardware module. The traffic awareness it's most key drawback currently a days. Primarily the design is split into modules like wireless sensing element network, RFID, GSM-GPS. Vehicle traffic congestion, management and observation it's one

of the important problems in road transport. The congestion suggests that the capability of traffic in network is quite capability of that network.

3: GAP IDENTIFICATION OF TARFFIC MANAGEMENT SYSTEM

1. Standard Traffic Control Systems:

In trendy life we've to face with several issues one among that is holdup changing into additional serious day when day. It's aforesaid that the high book of vehicles, the scanty infrastructure and therefore the irrational distribution of the event square measure main reasons for increased hold up. The most important cause resulting in hold up is that the high variety of car that was caused by the population and therefore the development of economy. To unravel this downside, the govt. ought to encourage individuals to use transport or vehicles with little size like bicycles or build tax on personal vehicles. Notably, in some Asian countries like Viet Nam, the native authorities passed law limiting to the amount of vehicles for every family. The ways mentioned higher than is de facto economical really. That the inadequate infrastructure cannot handle the problem of traffic is additionally a decisive reason. The general public conveyance is out there and its quality is extremely dangerous, largely within the establishing countries. Besides, the route and roads square measure incapable of meeting the need of skyrocketing variety of car. Rather than functioning on roads to accommodate the growing traffic varied techniques are devised to regulate the traffic on roads like embedded controllers that square measure put in at the junction. These techniques square measure shortly delineated in next section.

1 .Manual Controlling

Manual dominant the name instances it need man power to regulate the traffic. Reckoning on the countries and states the traffic polices are assigned for a needed space or town to regulate traffic. The traffic polices can carry sign board, sign light-weight and whistle to regulate the traffic. They're going to be schooled to wear specific uniforms so as to regulate the traffic

2 Automatic Controlling

Automatic traffic signal is controlled by timers and electrical sensors. In traffic signal every part a continuing numerical worth loaded within the timer. The lights are mechanically more matured and OFF betting on the timer worth changes. Whereas victimization electrical sensors it'll capture the supply of the vehicle and signals on every part, betting on the signal the lights mechanically start and OFF.

GAP IDENTIFICATION OF PREVIOUS AUTHOR WORK

GAP IDENTIFICATION IS BASED ON PREVIOUS REVIEW AND AUTHOR WOORKS.

Author name	Previous author work	New work improvement	Scope of improved work
Izraedy, R.Ngadinas, R. B. Altamad, M.L.Jais, D.Shuhaizar	Implementation of Raspberry Pi for Vehicle	USING TWO SEPARATE CONTROLLER FOR COMMUNICATION PURPOSE.	GOOD PERFORMANCES AND ACCURACY OF COMMUNICATION IS IMPROVED
M. Vikramaditya Dangi, Amol Parab	Image Processing Based Intelligent Traffic Controller	USING IOT BASED SYSTEM HAS BEEN IMPLEMENTED. ANDROID MOBILES DEVICE IS ADDED FOR BETTER RESULT ANALYSIS	SYSTEM ACCURACY IS IMPROVED AND DEVICE TO DEVICE COMMUNICATION METHOD IS BEST SOLUTION PERFORMANCE TECHNOLOGY
Ratul de Chaurite, and Fawzi ashshibi	Traffic light recognition using Image processing Compared to Learning Processes	TRAFFIC LIGHT SIGNAL IS CONNECTED TO IMAGE CAPTURE CAMERA WHICH CAN BE ANALYSIS IS EASILY TO BETTER PERFORMANCES THAT IS BETTER IMAGE RESOLUTION WE CAN USED METLAB SOFTWARE FOR IMAGE DEALLED ANALYSIS.	TRAFFICE DENSITY AND COUNT VECHILE IS EASILY ANALYSIS FOR TRAFFICE CONTROL USING METALAB SOFTWARE AND HIGH RESOLUTION CAMERA

4. PROBLEM STATEMENT

1. Some major city to scale back tie up drawback and bother free journey.
2. Maintain pollution free system.
3. To implement the system satisfy smart travel in smart ways in which needed

5. SCOPE OF THE PROJECT:

1. This system is in addition used for IOT based totally technology that's further wonderful. in to days some technical work is in addition doing for WSN network management .it is extraordinarily reliable .more AI based totally business is in addition developed this method in higher ways that within which Decide

6. IMPLEMENTATION ALGORITHM

1. Camera will capture the pictures and conjointly send the pictures threw the mat research lab software package.
2. Then mat {lab} laboratory [research research lab [research laboratory [science lab [science laboratory [workplace [work will capture pictures [the pictures] the photographs} and conjointly process the pictures then when process the pictures which might carry the elaborated images output are going to be show on met lab screen.
3. Then when pictures process the data is send threw the controller. When management sends the data from LED signal and control the signal.
4. Hence the data is additionally send threw the ZIGBEE module threw the most consumers connect.
5. Client one which might be conjointly connecting the American state fi threw .and send the data threw the LAN module .so most info is additionally send threw the LAN module.
6. After controller send the data to lcd [liquid crystal show [LCD] digital show| display} display which might be display the digital

output on the screen. Therefore count are going to be show at each hold on info.

7..Hence the LAN module is additionally send the data on remote consumer automaton good phone device from LAN threw .so count and knowledge are going to be show on the screen.

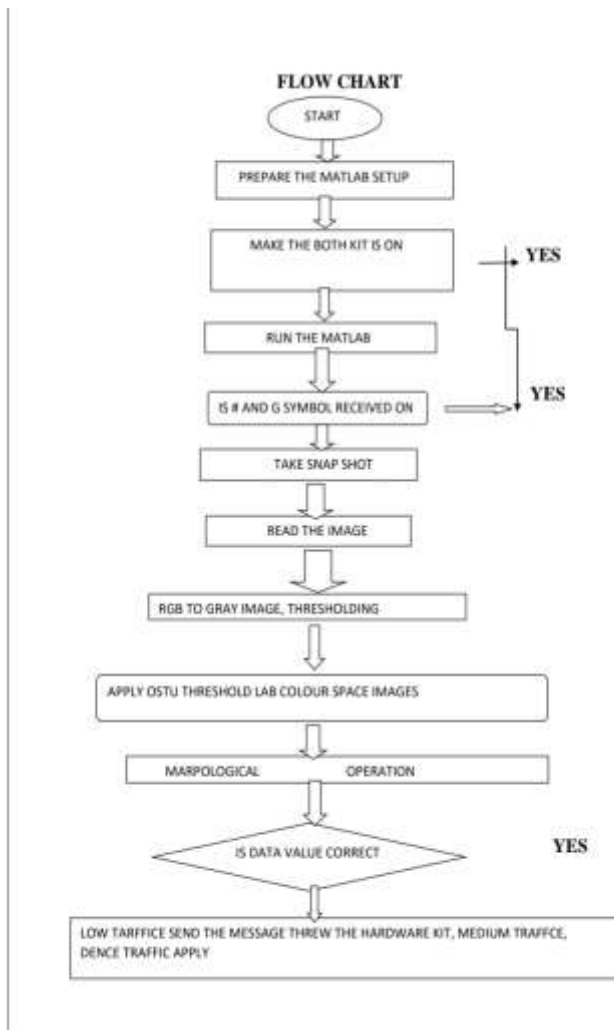
8. That info are going to be exploitation {the data |the info |the info} of some information at desired level.

7. OBJECTIVE

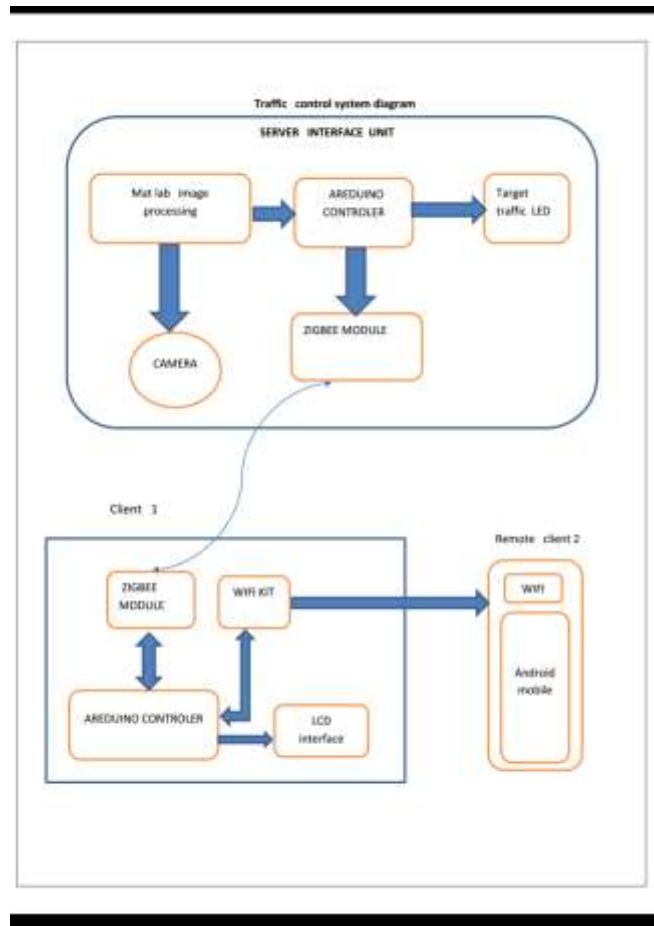
Main objective behind implementing this method is to take care of holdup on roads. To cut back massive waiting time on signals by dominant light reckoning on traffic density thereon specific direction.

2. To implement a system to satisfy specific want of sensible travel with sensible technology we tend to propose a system for dominant the traffic signal by image process. The vehicles square measure detected by the system through pictures rather than exploitation electronic sensors embedded.

8. FLOW CHART



9. TRAFFIC MANAGEMENT SYSTEM BLOCK DIAGRAM



10. SYSTEM WORKING

1. Camera: camera is additionally captured the images and additionally send to mat laboratory software and images preprocessing technique is used. High resolution camera is additionally used.
2. Software image profressing: better image contrast and elaborated image compared and conjointly provided Elaborated knowledge, some image enhancement technique is smart .it is done by exploitation luminance Convertor.
3. ARADUINO: arm which is advance controller provides signal time supported the traffic control density and which is send knowledge to focus on semiconductor diode wireless signal device.
4. Target semiconductor diode signal: that are indicate of Traffic signal roads at the indication Section.
5. Wireless module; wireless module with high module medium Texas power and high wireless network, this module send this signal from client 2 and main server.
6. Zigbee module: it is send threw the information form one device to another device .it is also used
7. AREDUINO: Their advanced controllers which can be send the information from the digital display interface screen and message show the screen. Traffic details show on system.
8. LCD screen: LCD screen conjointly show the output on the screen and traffic density and count.
9. Mechanical man mobiles: its count the traffic density and show on the mobile screen, which information conjointly send to user .more information is also provided to finish user device on system within the cloud.

10.. Cloud: This is additionally storage the in information by internet

11. MATLAB SIMULATION IMAGE PROCESSING TECHNIQUE

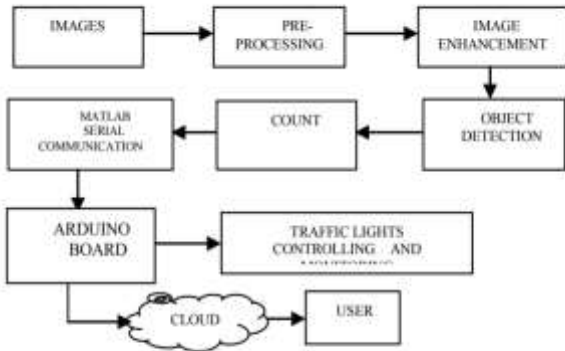


Fig 1.1: Block Diagram

Mat lab software images processing technique.

12. RESULT

TRAFFIC LIGHT SIGNAL SYSTEM OUTPUT:

From intelligent management management is best action of serious control .and avoid the matter of accident, the other major drawback is to boot handle merely, by exploitation this system. We'll get elaborate knowledge regarding deep learning of traffic and vehicle to complete user 2.this is further helpful in sensible traffic additionally doing travel. And artificial intelligences technology is additionally improve system stability .system is to boot used for IOT based totally technology that's further glorious. in to days some technical work is add for WSN network management .it is extraordinarily reliable .more AI based totally business is to boot developed this technique in higher ways in which within which De CIDE

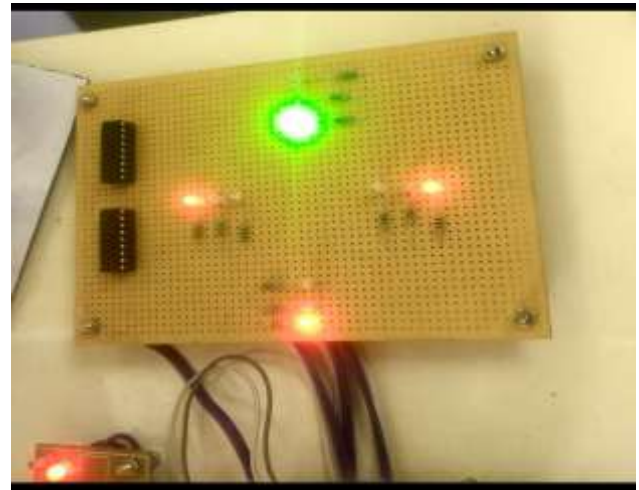
TRAFFIC LIGHT SIGNAL SYSTEM OUTPUT

When we has taking mat lab threv software result we have 3 condition to calculate the density of traffic

WHEN THIS CONDITION ARE CRECREATE THE 3 STEPS FROM TRAFFIC SIGNAL MANAGEMENT 12 LED IS ALSO ALLIEMENT OF TRAFFICE SIGNAL

TARFFIC DENCITY LEVEL	TRAFFICE SIGNAL DEALY	SIGNAL DISPLAY COLOUR
LOW DENSE TRAFFIC	5 SECOND	GREEN SIGNAL
MEDIUM DENSE TRAFFIC	15 SECOND	GREEN SIGNAL
HIGH DENSE TRAFFIC	25 SECOND	RED SIGNAL

13. TRAFFICE METALAB SIMULATION TRAFFIC SIGNAL TRAFFIC LIGHT



CAMERA SETUP FOR VECHILE TRAFFIC MOINTRING SYSTEM



LOW LEVEL VECHILE TRAFFIC RESULT

MAT LAB simulation images LOW LEVEL TRAFFIC DENSITY RESULT

Image capture by camera at low traffic density



Image capture by camera at low traffic density at RGB TO GRAY CONVERSION and display result on mat lab low density of traffic.



Low density of traffic is shown on LCD screen display

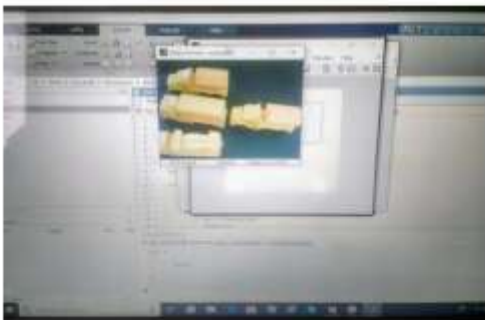
HIGH LEVEL VECHILE TRAFFIC RESULT

LOW TARRFFIC DENSITY TRAFFIC COUNT DISPLAY ON LCD DISPLAY



MEDIUM TAFFICE DENSITY RESULT

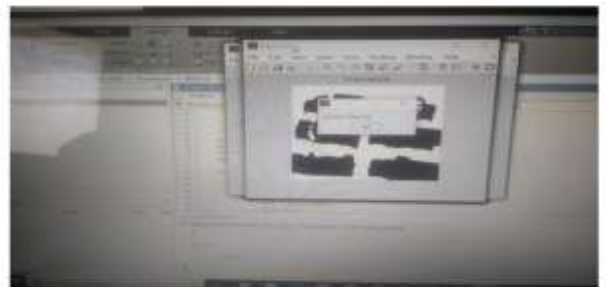
MEDIUM TRAFFIC DENSITY CAMERA IMAGES BY METALAB



CAMERA CAPTURE BY GEGE DENSITY TRAFFIC IMAGES BY METLAB INPUT IMAGE



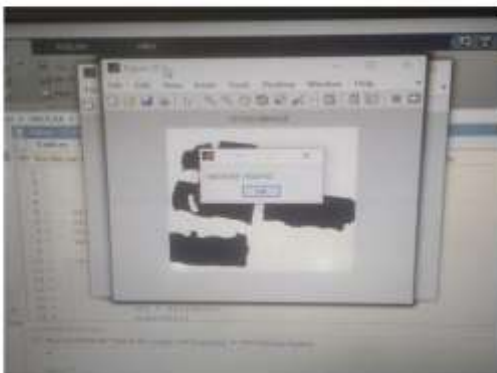
Image capture by camera at HIGH DENSE traffic density at RGB TO GRAY CONVERSION and display result on mat lab HIGH DENSITY of traffic



HIGH TARRFFIC DENSITY TRAFFIC COUNT DISPLAY ON LCD DISPLAY

MEDIUM LEVEL VECHILE TRAFFIC RESULT

Image capture by camera at MEDIUM traffic density at RGB TO GRAY CONVERSION and display result on mat lab MEDIUM density of traffic



MEDIUM TARRFFIC DENSITY TRAFFIC COUNT DISPLAY ON LCD DISPLAY



MATLAB HIGH DENSE TRAFFIC RESULT DISPLAY

WIFI NETWORK THREW SMART ANDROID PHONE TRAFFICVECHILES RESULT

HIGH TRAFFIC DENSITY COUNT DISPLAY ON LCD SCREEN



VECHILE RESULT ON WIFI NETWORK ANDROID SMART PHONE



14. CONCLUSION

.. From intelligent management management is best action of serious control .and avoid the matter of accident, any other major drawback is to boot handle merely, by exploitation this technique .we will get careful knowledge regarding deep learning of traffic and vehicle to complete user .this is further useful in sensible traffic and emergency travel. And artificial intelligences technology is additionally improve system stability. Traffic control victimization image processing” technique that we tend to propose overcomes all the restrictions of the sooner (in use) techniques used for dominant the traffic. Earlier in automatic control use of timer had a downside that the time is being wasted by inexperienced lightweight on the empty. This method avoids this drawback. Upon comparison of assorted edge detection algorithms, it absolutely was inferred that smart Edge Detector technique is that the best one. The project demonstrates that image process may be a much more economical technique of control as compared to ancient techniques. The employment of our technique removes the requirement for further hardware like sound.

15. FUTURE WORK

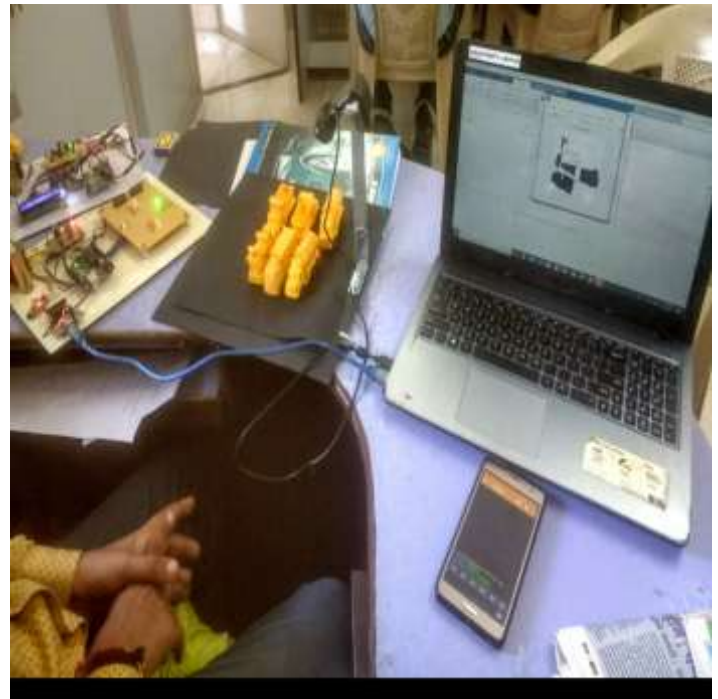
1. This method is to boot used for IOT based technology that's further glorious. in to days some technical work is to boot doing for WSN network management .it is extraordinarily reliable .more AI based business is to boot developed this method in higher ways in which during which Decide. Therefore computer science and deep learning methodology presently a days most popular technique, in several country has searches that kind resolution, now a lot of country developed this methodology victimization next generation network technology

2. The focus shall be to implement the managementler mistreatment DSP because it will avoid significant investment in industrial control laptop whereas getting improved process power and optimized system structure. The hardware implementation would modify the project to be utilized in period of time sensible conditions. additionally, we tend to propose a system to spot the vehicles as they pass, giving preference to emergency vehicles and aiding in police work on an oversized scale

16. PROPOSED WORK OUTCOMES

1. From intelligent management is best action of serious control .and avoid the matter of accident, any other major drawback is in addition handle merely, by exploitation this system 2. We are going to get detailed information regarding deep learning of traffic and vehicle to complete user .this is further useful in sensible traffic and emergency travel. And artificial intelligences technology is additionally improve system

15. FINAL PROJECT SETUP



Acknowledgement

We have completed this project form our knowledge point of view and also support of prof DR M. Sankar. Which is also support from this project and great work experience from our collage Ashok Rao mane group of institutes Kolhapur Maharashtra . we have proposed this system for traffic management of city or any other area . so this system is also helpful. And provides better efficient way support. Traffic police work is also improve and provides the stability.

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