SRI VENKATESWARA COLLEGE OF ENGINEERING(Autonomous)
INSTITUTION INNOVATION COUNCIL (IIC)
IDEA COMPETITION-APPLICATION FORM

Name of the Student	Mohammed Thowfiq S, Rahul RK, Sairamnath K
Branch	Information Technology
Year /Semester	3rd year - 6th semester
Section	B
Roll.No	58,74,81
Register No	170801058, 170801074, 170801081
Any other Camp attended related to Innovation/Entrepreneurship/Incubation	Entrepreneurship Awareness Camp by Entrepreneurship Promotion and Incubation Center EPIC, TNSI 2018- Awareness Program- Entrepreneurship Camp by Rajiv Gandhi National Institute of Youth Development
Idea Competition – Mention the Theme *(Please refer the circular, for more details)*	Artificial Intelligence and Machine Learning
Field trips attended related to the theme.	**Yes**
If Yes. Mention the Name of the Organization with Address	Infoziant IT Solutions, Chennai Rajiv Gandhi National Institute of Youth Development, Sriperumbudur
Mentor (if any) Name and Designation	Mrs. Sharon Femi Assistant Professor IT
Student Name with Signature	
Department IIC Coordinator Name with Signature	

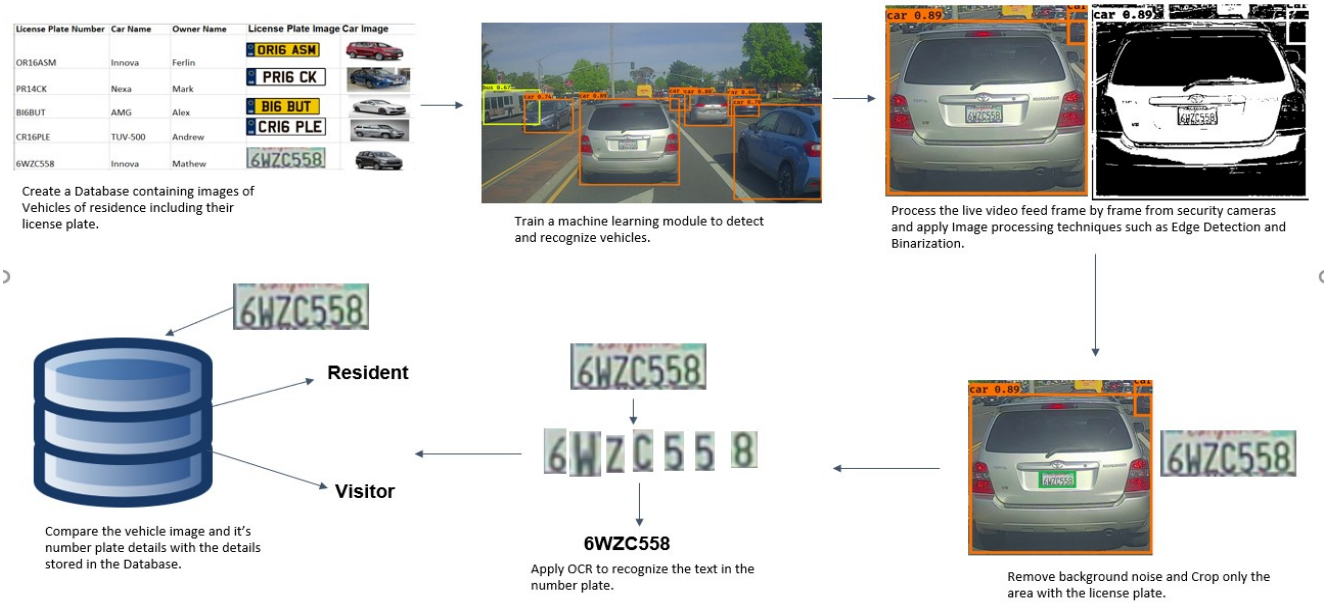
Novelty of Idea / Innovation

This objective of the project is to develop a License Plate Recognition system that can identify the license plates in real time and monitor different vehicles of a particular area from the live video feed from the security camera using various image processing and machine learning techniques. A database is created with details such as images of resident's vehicles, owner information, type of vehicle and their license plate details which will be used during the verification phase. A machine learning model is trained using vehicles dataset in order to detect

and recognize vehicles such as cars, bikes, etc entering and leaving the residential area. The images from the live video feed are processed frame by frame using vehicle detection model. Once a vehicle is detected, the background is eliminated by applying image processing techniques such as edge detection and binarization to the region of interest. The region containing the license plate is cropped and fed into an Optical Character Recognition tool - pytesseract to recognize the text in the number plate. The image of the vehicle and the recognized license plate number is compared with the details stored in the Database. The vehicle can be concluded as one of the residents if it matches with the database. Otherwise, the vehicle is considered to be a visitor vehicle and will be updated in a separate database for visitors. This will help in continuous and autonomous monitoring of vehicles in various places such as residence, offices, malls, theatres, parking lots and other public places.

Methodology

1. Create a Database containing images of vehicles of residence including their license plate number.
2. Train a machine learning module to detect and recognize vehicles.
3. Process the live video feed frame by frame from security cameras and apply image processing techniques such as Edge Detection and Binarization.
4. Remove background noise and crop only the area with the license plate.
5. Apply Optical Character Recognition to recognize the text in the number plate.
6. Compare the Vehicles image and its number plate details with the details stored in the database.



Societal impact

India is facing more problems related to security and surveillance. The project aim is to develop an affordable image processing solution for autonomous monitoring. Our project helps to identify the license plates in real time and monitor different vehicles of particular area from the live video feed from the security camera using various image processing and machine learning techniques. It can able to monitor hundreds and thousands of vehicles quickly and accurately at the same time. Our project helps to improve the security and surveillance.

Market potential

Many residential society administrations, tolls, business complexes and parking spaces in India lack an automated system for car parking and vehicle monitoring. Most of the commercial and residential places face an impending problem of illegal car/vehicle parking inside their premises. The LPR system will help to automate the process of monitoring the vehicles entering and exiting the area and it also helps to improve the security and surveillance.

HOD Signature with Date