

CASE STUDY- AI IN RESCUE OF CAR PARKING ISSUES AT A RENOWNED HOSPITAL IN GURGAON, INDIA

Introduction

With the development of technology, the organizations are improving the infrastructure for ensuring social, economic and physical welfare.

The multi-speciality hospital in Delhi-NCR offers medical specialties, high-end diagnostic services, emergency services and treatment to multiple problems simultaneously. It further provides top of the line services to cater to the comfort of its patients and their loved ones. The client has established its presence among the prominent medical facilities in India.

The hospital has a diverse workforce of healthcare professionals, residents, trainees, educators and researchers. It not just strives to provide best suitable facilities to its patients, but also wants to improve the overall experience for its healthcare workers of working at the hospital. So far it is not a major concern for them. The point of concern was the management of parking in the hospital premises.

Problem Statement

The hospital realized that car parking management for the medical practitioners was a major issue. The hospital has multiple medical facilities catering to different types of treatment and each facility has its own parking area. With high percentage of vehicle ownership by the medical staff, vehicle parking was an everyday issue at the hospital. They have to help the parking management staff to identify and filter vehicles without being intrusive. The number of parking spaces are fixed and each medical practitioner is allowed to purchase a fixed number of decals. The parking spaces are allotted like this, providing an accurate database for parking database inventory. However, the hospital identified the problem which was more than just parking space woes.

The major challenge surfaced when the vehicles remained parked in the parking lot for long hours and sometimes over night which led to spillover. Another issue encountered was that the medical staff often entered the hospital premises at odd hours owing to their work requirements. They entered one premise of the hospital for work and left from the exit gate of a different premise causing major issue at the hospital's entry/exit gates. The administrators needed an improved technique for car parking management without troubling its healthcare workers in using the parking premises of the hospital.

The hospital approached Vehant Technologies for a solution

and we scrutinized the premise of the hospital and observed that the kind of high volume of medical staff everyday, it requires a fully functional high performance car parking solution at a reasonable cost which should be capable of fully integrating with the existing parking system. Vehant's team realized that the decal based system needs to be integrated with a monitoring system that will solve the issue at hand.

Proposed Solution

Vehant's team approached the client to adopt Artificial Intelligence technology for the problem. The automatic number plate recognition and facial recognition systems that feature AI based machine learning and deep learning algorithms were proposed to be integrated with the existing system and implemented at the car parking lots.

The ANPR is programmed to read the vehicle license plates. The facial recognition system is programmed to capture the image of the driver. The image is clubbed with license plate in real time to detect and discern faces using AI ML algorithm. The solutions are implemented at the lighted areas at the entry and exit gates of the parking lots of the hospital. The tools apply computer image recognition technology using a wide variety of AI algorithms to detect the license plates in the area. It gives great flexibility for images of vehicles to be taken at any time of the day or night. It is capable of scanning data and providing real time information. The system identifies the car belonging to the healthcare worker of the hospital and validates their presence by providing information about their car number into the on-site system. The GPU installed at the site used Intel Xeon Scalable processors that deliver analytics performance for faster and accurate insight. The processors offer high performance and operational controls for video analytics on the premises.

The integrated solution offers an improved performance to ease the car park management based on exact car park duration and permit only circumstances. The operators can access wide range of information about the vehicle such as maximum stays, overstays and abandoned vehicles and with real time information, they can avoid confusion and have planning about vehicle management.

The solutions were integrated with the existing cameras and Vehant recommended to the client to implement the system on external servers and GPU. After implementing the system at the premises, the hospital found that the innovative technology resolved their issues in managing the parking lot for healthcare workers at their premises. The system could fetch the login time of the car with license plate number. The number of cases of abandoned vehicles and cars parked for long hours were reduced considerably. The medical staff experienced better convenience at the entry and exit gates. The ANPR integrated with FRS gave the operators a better control over the parked vehicles.