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<p>(51) International classification :G08G0001140000, G06N0020000000, G05B0013020000, G05B0019042000, G06V0020620000</p> <p>(86) International Application No :NA Filing Date :NA</p> <p>(87) International Publication No : NA</p> <p>(61) Patent of Addition to Application Number :NA Filing Date :NA</p> <p>(62) Divisional to Application Number :NA Filing Date :NA</p>	<p>(71)Name of Applicant : <b>1)NOIDA INSTITUTE OF ENGINEERING &amp; TECHNOLOGY</b> Address of Applicant :19, KNOWLEDGE PARK-II, INSTITUTIONAL AREA, GREATER NOIDA-201306, GAUTAM BUDDHA NAGAR, UTTAR PRADESH, INDIA Gautam Buddha Nagar -----</p> <p><b>Name of Applicant : NA</b> <b>Address of Applicant : NA</b></p> <p>(72)Name of Inventor : <b>1)SHASHANK SINGH</b> Address of Applicant :NOIDA INSTITUTE OF ENGINEERING &amp; TECHNOLOGY, 19, KNOWLEDGE PARK-II, INSTITUTIONAL AREA, GREATER NOIDA-201306, GAUTAM BUDDHA NAGAR, UTTAR PRADESH, INDIA Gautam Buddha Nagar -----</p> <p><b>2)RISHI KESHARWANTI</b> Address of Applicant :NOIDA INSTITUTE OF ENGINEERING &amp; TECHNOLOGY, 19, KNOWLEDGE PARK-II, INSTITUTIONAL AREA, GREATER NOIDA-201306, GAUTAM BUDDHA NAGAR, UTTAR PRADESH, INDIA Gautam Buddha Nagar -----</p> <p><b>3)SUDHANSHU RAI</b> Address of Applicant :NOIDA INSTITUTE OF ENGINEERING &amp; TECHNOLOGY, 19, KNOWLEDGE PARK-II, INSTITUTIONAL AREA, GREATER NOIDA-201306, GAUTAM BUDDHA NAGAR, UTTAR PRADESH, INDIA Gautam Buddha Nagar -----</p> <p><b>4)AAKANKSHA</b> Address of Applicant :NOIDA INSTITUTE OF ENGINEERING &amp; TECHNOLOGY, 19, KNOWLEDGE PARK-II, INSTITUTIONAL AREA, GREATER NOIDA-201306, GAUTAM BUDDHA NAGAR, UTTAR PRADESH, INDIA Gautam Buddha Nagar -----</p> <p><b>5)DR. HITESH SINGH</b> Address of Applicant :NOIDA INSTITUTE OF ENGINEERING &amp; TECHNOLOGY, 19, KNOWLEDGE PARK-II, INSTITUTIONAL AREA, GREATER NOIDA-201306, GAUTAM BUDDHA NAGAR, UTTAR PRADESH, INDIA Gautam Buddha Nagar -----</p> <p><b>6)MS. VAISHALI SHARMA</b> Address of Applicant :NOIDA INSTITUTE OF ENGINEERING &amp; TECHNOLOGY, 19, KNOWLEDGE PARK-II, INSTITUTIONAL AREA, GREATER NOIDA-201306, GAUTAM BUDDHA NAGAR, UTTAR PRADESH, INDIA Gautam Buddha Nagar -----</p>
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(57) Abstract :  
Disclosed herein is an AI-driven smart parking management system for optimized space utilization and traffic reduction (100) comprises a data acquisition module (102) configured to detect and monitor occupancy status of individual parking spaces in real time. The system also includes a plurality of image capturing units (104) configured to perform vehicle classification, license plate recognition, and real-time surveillance monitoring. The system also includes a machine learning engine (106) configured to analyze historical and real-time data collected from said IoT sensors and image capturing units. The system also includes a centralized cloud-based database (108) configured to store, update, and process parking-related data. The system also includes a user interface module (110), configured to provide end-users with real-time information about available parking spots, navigation assistance. The system also includes an automated control unit (112) configured to perform AI-based authentication of incoming and outgoing vehicles and allow or restrict access accordingly.

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