ParkSense +: AI Parking Detection System

For Cities, Towns, Airports, Malls, Hospitals & Commercial buildings

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The Urban Parking Challenges

- Parking is very expensive
- Hard to find empty parking spots
- Increase in parking violations, due to high parking demand
- Limited Parking Enforcement Resources
- Increase in Bike Lane Parking Violation

Looking for parking leads to High Traffic Congestion
The Urban Parking Challenges

Increase In Bike Lane Parking Violation

Credits - BlogTo
The Urban Parking Challenges

Increase in hate crime against parking enforcement officers
ParkSense+ : AI Curbside Parking Detection System

Benefits of AI Curbside Vehicle Detection System

- Real Time Parking Occupancy Data
- Reduce search time
- Reducing traffic congestion & Co2 emission
- Can able optimize parking usage

- Real-Time Parking Detection System
- Overtime & illegal parking detection - Bike Lane Parking
- Historical Datas & Insights for future Planning
- Automate Parking Enforcement & Ticketing
Users can plan their commute, which will reduce the traffic

- With real-time availability of parking, for On-Street & Off-Street commuters can plan their commute.
- Commuters can able to reserve parking spots as well.
- Navigate commuters to the exact parking spots.
ParkSense+

- Real-time data
- Insights historical statistics
- License Plate Recognition
- Fully privacy-compliant
- Automatic real-time alerts
- Evidence for Issuing Citations
Insights & Analytics

Screenshot from Town of Newmarket pilot project dashboard

Occupancy

- Occupancy: 58.6%
- Min. occupancy: 20.9%
- Max. occupancy: 88.7%

Availability

- Dec 11, 2023 5:00 PM
- Dec 8, 2023 1:00 PM

Occupancy rate

- Graph showing occupancy rate over time.
Occupancy Rate & Visitor Flow Rate

**Occupancy Rate**
- 19.6% on Sep 19, 2023, 10:00 AM
- 0.0% on Sep 22, 2023, 10:00 PM
- 60.1% on Max. occupancy at

**Visitor Flow Rate**
- 33 total visitors, 5 min. outflow, 11 max. outflow on Sep 19, 2023, 1:00 AM
- 7.5 median turnover, 4 min. outflow, 2 max. outflow on Sep 23, 2023, 2:00 PM
License Plate Recognition Feature

Camera 04

nex_012

- Camera: Camera 04
- Status: Occupied
- Duration: 4 hours, 36 minutes
- Since: Wednesday, September 27, 2023 10:02 AM
- Label: MF645TY
Violations - Overnight Parked Vehicles

Screenshot from Town of Newmarket pilot project dashboard

<table>
<thead>
<tr>
<th>Violation</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>141</td>
<td>15h 31min</td>
</tr>
<tr>
<td>185</td>
<td>15h 28min</td>
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<tr>
<td>140</td>
<td>14h 14min</td>
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<tr>
<td>5</td>
<td>13h 52min</td>
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<tr>
<td>137</td>
<td>13h 40min</td>
</tr>
<tr>
<td>3</td>
<td>12h 3min</td>
</tr>
</tbody>
</table>
Case Study – Comparison – ParkSense+ V/S Ground Sensors

**For 230 Parking spots**

- Setup Cost for ground based sensor: $90,000
- Setup Cost for ParkSense+: $15,000

**Saving nearly $75k | Six times cost savings**

For ParkSense+:
- Less Cost
- More Reliable
- Easy to Install

For Ground Based Sensors:
- Expensive
- Less Reliable
Use Cases

Real-Time Parking Availability For Drivers For On-Street & Off-Street

Effectively Manage Curbside Parking

To Monitor Parking spots where Max. Parking limit is enforced

Real-Time Violation Monitoring for Bike Lane & No Parking Zones and Loading Zones Parking

Used to conduct Parking Studies

Data-Driven Decision Making - Enables data-driven urban planning and policy-making.
Some More Use Cases

Parking Enforcement & Management | Real-Time Availability For Drivers

- Airports
- Hospitals
- Shopping Centers
- Tourism Destinations
- Train Stations
- Hotels
- Employee Car Parks
- Stadiums
Any Type Of Spots In Any Weather

- Off-street
- On-street
- Unmarked
- Indoor
- Truck parking
- Bus depots
- Marinas and harbors
- In any weather
We are seeking Cities, Towns & commercial partners to pilot our solution.
Making Parking Affordable & Sustainable

Join us in our Journey

Info@loopparking.ca
Implementation Process

- Initial Assessment
- 6 Month Pilot Project
- Use Existing Cameras or Install New Cameras to Lamp Posts
- Testing and Optimization
Business Model

P-Saas (Parking Solution as a Service)

For Ai Curbside detection system

$8.5 / Month per parking spot + One Time Setup Cost

Ie: For a medium Size - 300 parking spots - Monthly $2,500

Real-Time Parking Occupancy Information is completely FREE for Drivers
ParkSense+ Performs well during Winter
Privacy & Data protection

Both, On-premise & cloud analysis comply

We do not store any images.

We automatically delete images after processing.

Our solution automatically blurs pedestrians & vehicle number plates before image analysis to ensure data remains anonymous.

If analyzed on-premise, the images do not leave the customer's premises but are processed and analyzed on a server on-site.
Server Options

Directly From IP Camera - Cloud Processing

On-premise – Processing using Server

On the edge – Processing in edge
Parking App Screenshots

Loop

- Reserve Spot
- IoT Sensors
- Real Time Occupancy Data
- SpotSwap
- Integrated Parking Management Software
- In App Payment
- Optimized Route

Login

Phone number

Password

Login

Forgot Password

Features:
- Reserve Spot
- IoT Sensors
- Real Time Occupancy Data
- SpotSwap
- Integrated Parking Management Software
- In App Payment
- Optimized Route

Login Screen:
- Phone number
- Password
- Login
- Forgot Password

App Screens:
- Map with search bar
- Available spots
- Spot details
- Payment options
- Optimized route
- Real-time occupancy data

App Features:
- Start earning points
- Integrated parking management software
- In-app payment
- Spot swapping
- Optimized route

Useful links:
- FAQ
- Privacy statement
- Terms of service
- Contact us

Checkout Summary:
- Coach Hill Drive, Kitchener, ON, Canada
- Start date: Jan 16, 2023
- End date: Jan 19, 2023

Payment options:
- Credit card
- PayPal
- Apple Pay
- Google Pay

Real-time occupancy data:
- Available spots
- Occupied spots
- Real-time parking availability

Guaranteed spaces:
- Guaranteed spots
- Spot swap
- In-app payment

Optimized route:
- Shortest path
- Parking availability
- Real-time traffic updates

Stakeholders:
- Parking management
- IoT sensors
- Real-time data
- Users

Benefits:
- Convenience
- Time savings
- Reduced congestion
- Enhanced user experience

Development:
- UX design
- UI development
- Integration
- Testing

Future improvements:
- AI integration
- Machine learning
- Personalized recommendations

Acknowledgments:
- Team effort
- Customer feedback
- Continuous improvement

Contact:
- Customer support
- Technical support
- Feedback form

About:
- Loop
- Parking management
- IoT
- Real-time data
- User-friendly app

Legal:
- Terms of service
- Privacy policy
- Intellectual property

Support:
- Help center
- Chat support
- Email support
Our Team

Steeson Mathew  
Co-Founder/CEO

Bijal George  
Co-Founder/COO

Rasmin A.S  
Co-Founder/CTO  
AI/Machine Learning

Daison Mathew  
Co-Founder/CMO

Grant Brigden  
Advisor  
Co-Founder Rover Parking (DMZ Alumni)