



PRAIRIE ROBOTICS

RECYCLING MADE SIMPLE

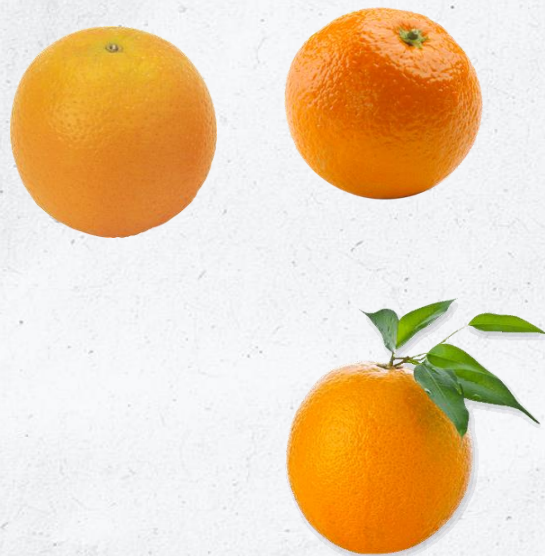


Agenda

- What is Machine Learning?
- Where we are
- Where we're headed

What is Machine Learning?

- Example: Identify Apples & Oranges







Orange



Orange



Orange



Apple



Apple



Apple



Orange



Orange



Orange



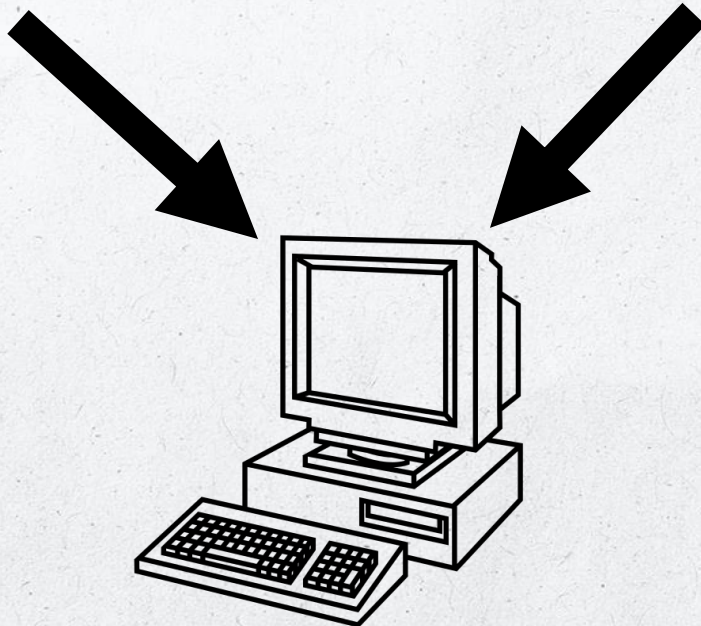
Apple

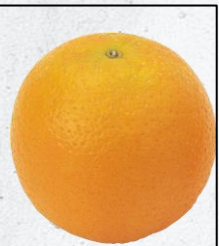


Apple



Apple





Orange



Orange



Orange



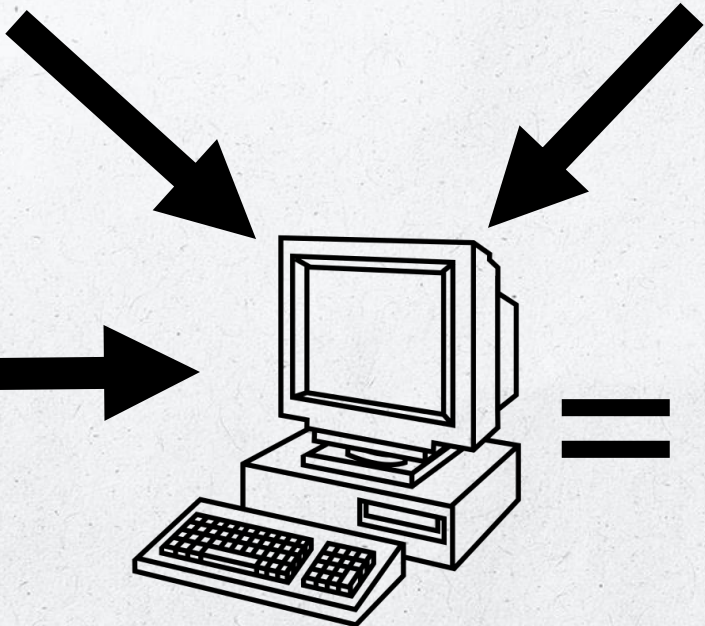
Apple



Apple



Apple



Orange
89.66%
Confidence

89.66% orange



89.66% orange

What is Machine Learning?

“Machine learning (M.L.) is a branch of Artificial Intelligence (A.I.) which uses data and algorithms to imitate the way that humans learn, gradually improving in accuracy.”

Machine Learning

Everyday

NETFLIX

Top Picks for Sam



Machine Learning

Everyday



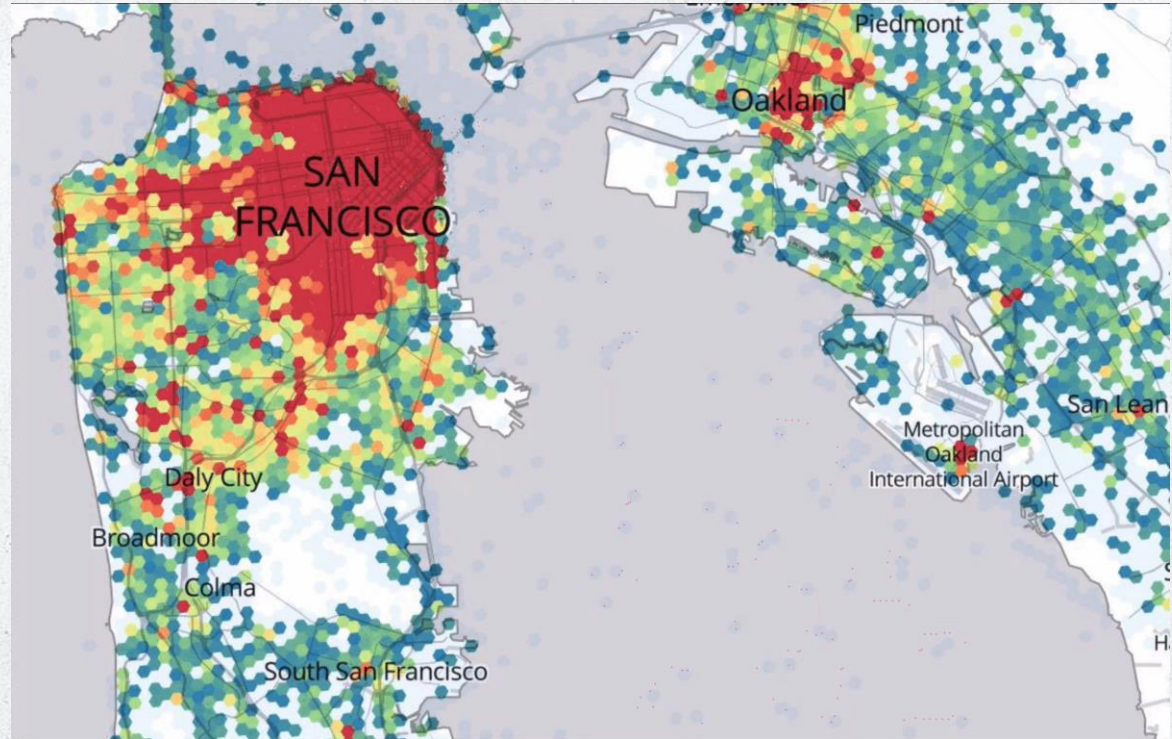
The New York Times

Would You Like Fries With That? McDonald's Already Knows the Answer

The fast-food chain is turning to artificial intelligence and machine learning in the hopes of predicting what customers want before they decide.

Machine Learning Everyday

Uber



Machine Learning

Waste Management



**Residential
Sorting**



**ICI
Sorting**



Processing



**Residential
Collections**



**ICI
Collections**

Processing Sorting

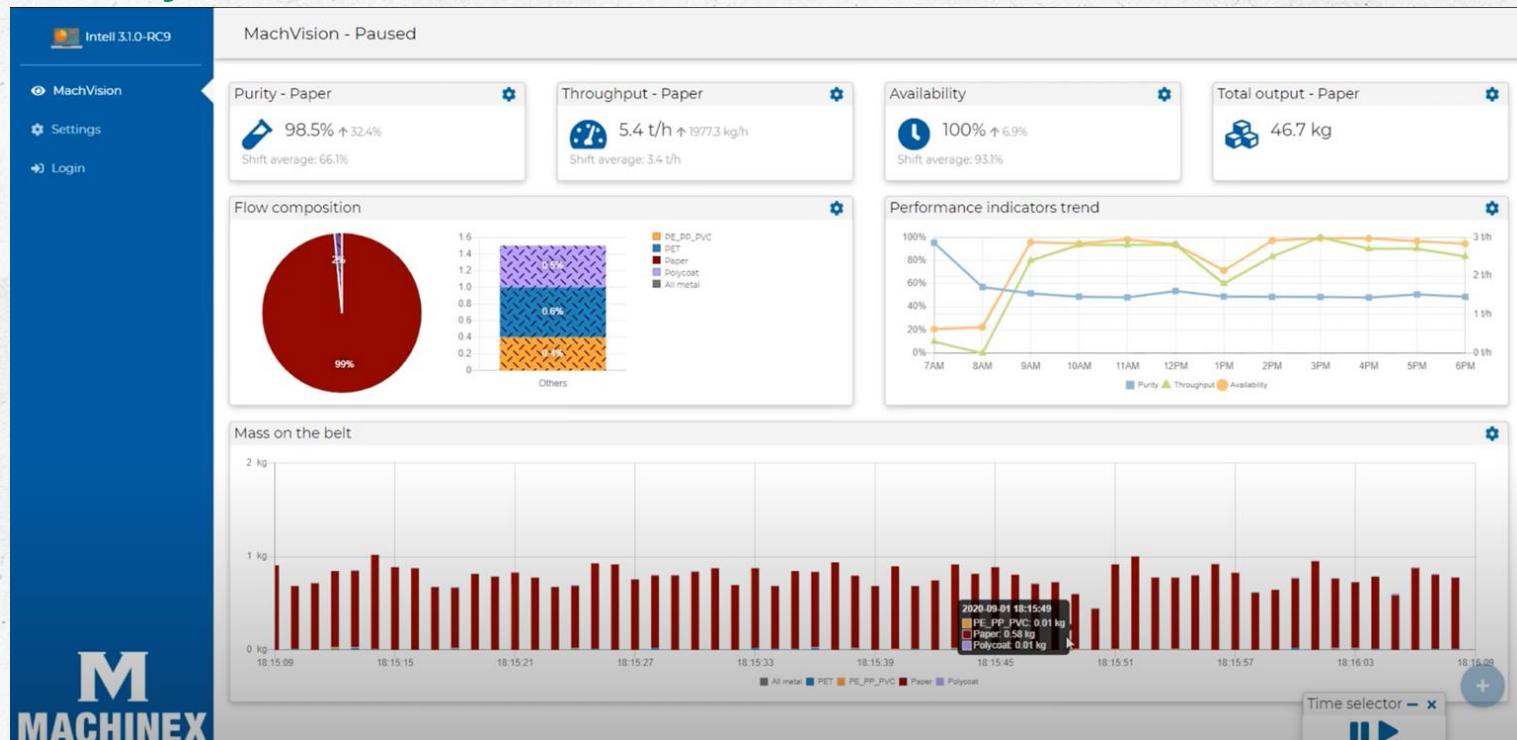


Processing

Analytics

- Throughput
- Composition
- Purity
- Mass on the belt

Processing Analytics



Processing

Business Model Innovation

- Low capital investment
- Subscription based usage fee

ICI Collections



COMPOLOGY




TAOGLAS®



pello

ICI Collections

Fill Level



Feb 04 at 10:32pm

FILL LEVEL (0%)



Mar 06 at 9:11pm

FILL LEVEL (62%)

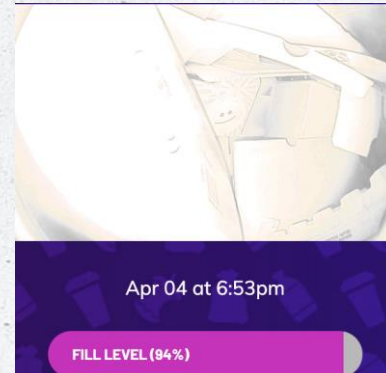
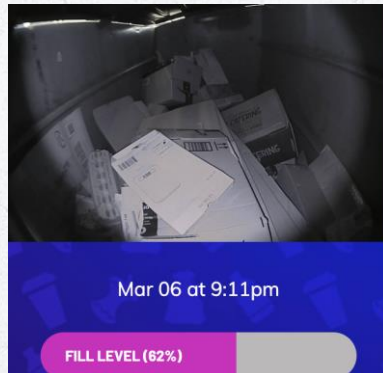
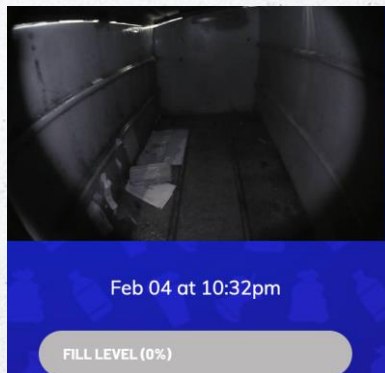


Apr 04 at 6:53pm

FILL LEVEL (94%)

ICI Collections

Fill Level



Date	Time	Fill Level	Event Name
2022-03-29	21:37	96%	Pickup
2022-03-25	22:16	95%	Pickup
2022-03-22	21:28	95%	Pickup
2022-03-19	0:13	96%	Pickup
2022-03-11	22:29	97%	Pickup

ICI Collections

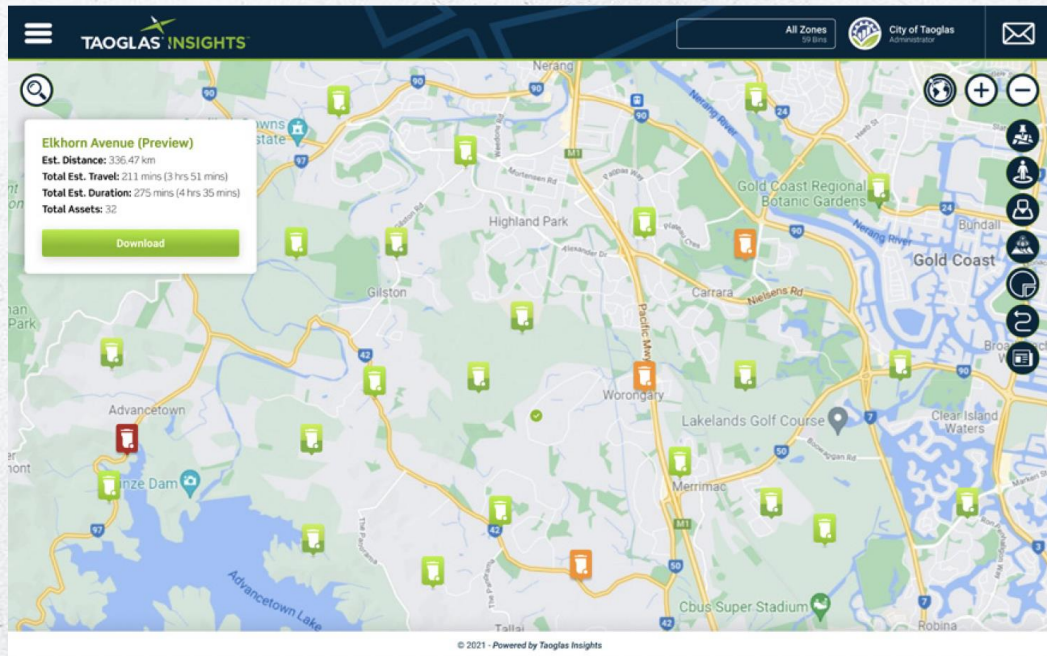
Contamination



ICI Collections

Intelligent Routing

- Fill level
- Contamination



ICI Sorting

Customer Experience



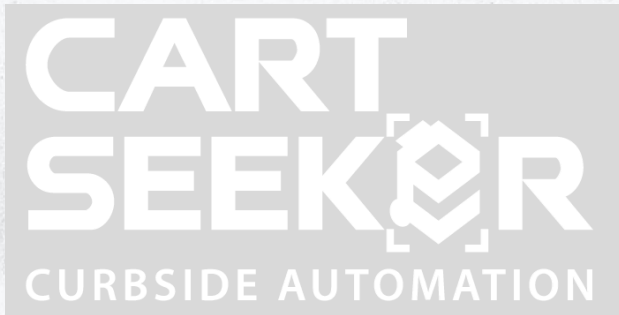
ICI Sorting

Customer Experience

- Sorting
- Gamification

Residential Collections

Route Efficiency



McNeilus[®]



Residential Sorting

Contamination & Focused Feedback



**PRAIRIE
ROBOTICS**
RECYCLING MADE SIMPLE



Residential Sorting Contamination & Focused Feedback

Be CartSmart

It's important to **ONLY** put acceptable recycling material in your blue cart. The **wrong items** can reduce the quality of good recyclables and damage sorting equipment.

The City is randomly checking recycling carts throughout the community.

By checking blue carts, we hope to:

- Encourage proper sorting
- Gather information on common mistakes



Current Resident
1234 Main St
Regina, SK
S4S 1S9

Flip for your cart results.



OOPS!

Avoid common recycling mistakes.
Keep these items out of your cart:



Crinkly plastic packaging



Stretchy plastic bags and film



Styrofoam



Paper disposable cups



During your recent collection we found some wrong items in your blue cart.

Thanks for recycling!

For more information, visit Regina.ca/waste
or call Service Regina at 306-777-7000.



Residential Sorting Contamination & Focused Feedback



Residential Sorting

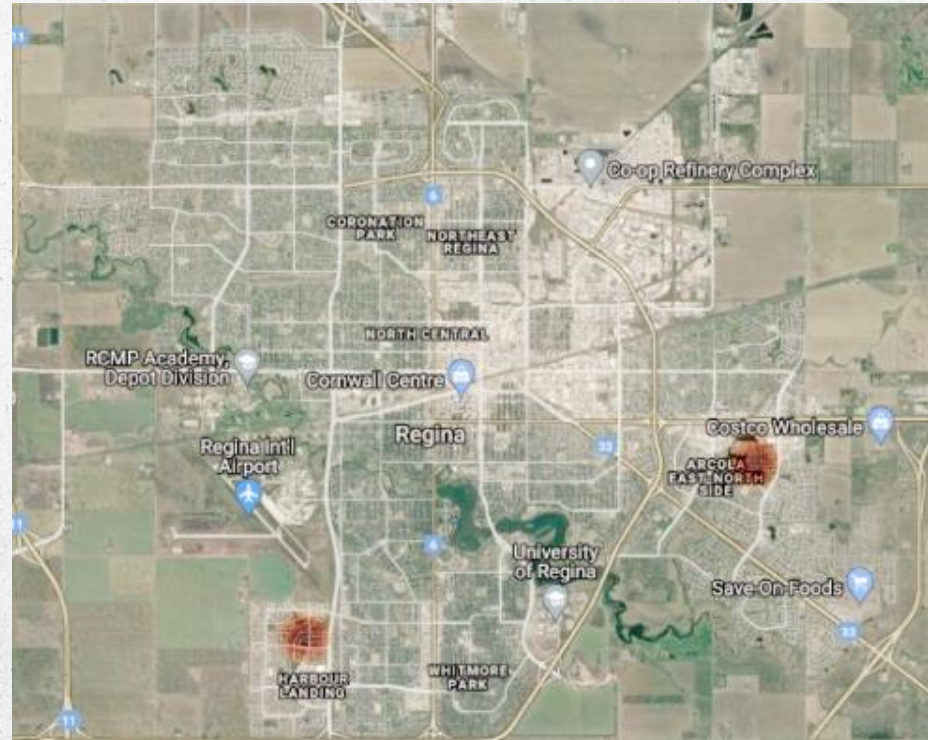
Contamination & Focused Feedback



Residential Sorting

Contamination & Focused Feedback

- Geo-fenced social media ads



Machine Learning

Waste Management - Where we are



**Residential
Sorting**



**ICI
Sorting**



Processing



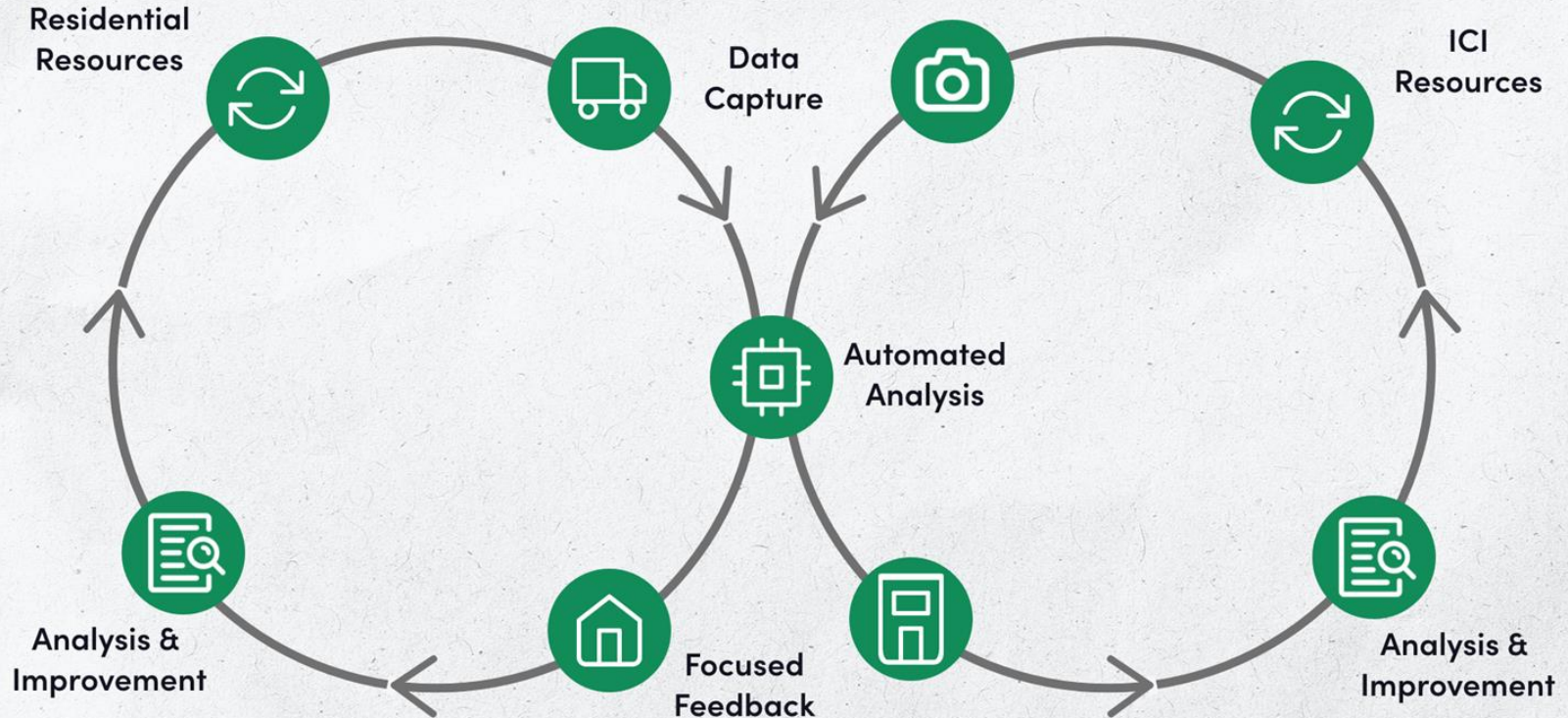
**Residential
Collections**



**ICI
Collections**

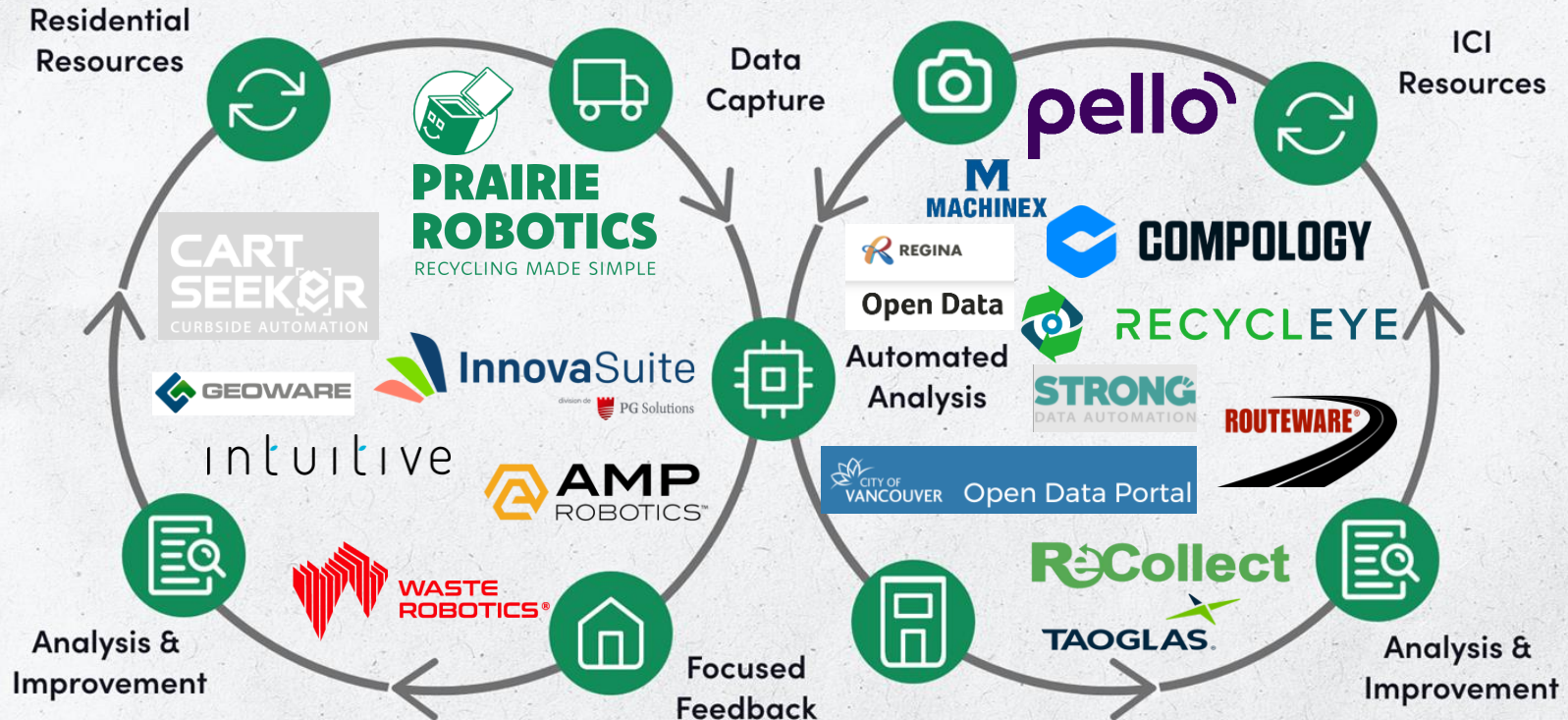
Machine Learning

Waste Management - Where we're headed



Machine Learning

Waste Management - Where we're headed



Machine Learning

Waste Management - Where we're headed

- Data across Organizations
- Data across Governments
- Data to inform Producers
- Data throughout the Circular Economy



PRAIRIE ROBOTICS

RECYCLING MADE SIMPLE



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