



THE FUTURE OF SELF-CHECKOUT

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INTRODUCTION



Heightened appreciation for self-checkouts



53% of Canadians prefer to use self-checkouts vs 19% before the pandemic



Self-checkout comes with increased theft
Accounts for 4% of inventory for self-checkout vs 2% for traditional checkout



OUTLINE

- Executive Summary
- Business Opportunity Brief
- The Solution
- Conclusion





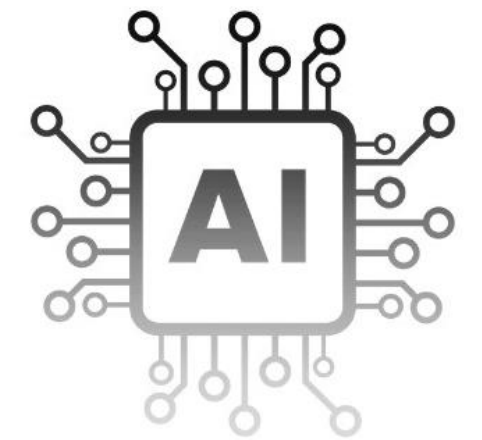
NEED



- Growing demand for the use of self-checkout counters
- Address issues related to theft in self-checkout
- Provide real-time intelligent solution to accurately identify suspicious activities

SOLUTION

- AI Technology Software
- Identify suspected theft through behavioral patterns





TARGET CLIENT

Walmart 





SUPPORTING INSIGHTS: MARKET RESEARCH



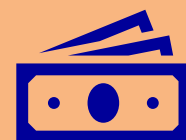
SUPERMARKETS & GROCERY STORES IN CANADA

Largest food retail channel in Canada



JULY 2023 RETAIL SALES

Canada: 2% in July or CAD 66 billion
Ontario: 1.8% Toronto 3.1%



WALMART

Revenue in January 2023: US 611 billion
Share of Canadian market: 8% in 2021
403 retail stores in Canada



CHECKTECH

WALMART



230 MILLION CUSTOMERS VISIT
(2022)



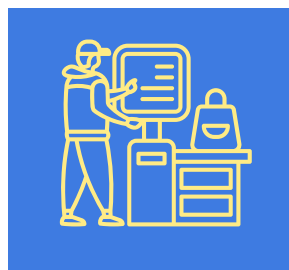
1.6% ANNUAL REVENUE LOSS TO
THEFT



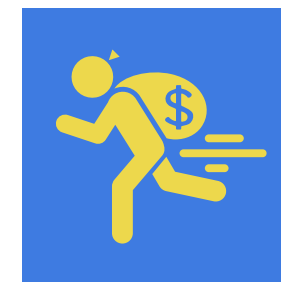
\$2.7 BILLION INVESTMENT
RELATED TO THEFT



4% ANNUAL GROWTH IN SHRINK
~ \$280 MILLION LOSSES IN THE
NEXT YEAR







50% OF LOSSES FROM
SELF-CHECKOUT
TERMINALS



\$8 BILLION LOSS DUE TO
THEFT (2022)



Current Technology of Walmart and its Competitors

<u>Security Process</u>				
1. Identification	Uses handy "TC device"	N/A	N/A	N/A
2. Verification	Checked in RACK area/ CCTV.	N/A	N/A	N/A
3. Action Taken	Check-Out Error/ Detector on Appliances	Hand Basket, Card Only, & 15 items only.	CCTV Installations & staff in the area.	Staff Check Membership Cards or Scan Items for you.
4. Legal action	Take legal action if the item is \$5000 above.	N/A	Take legal action if the item is \$10 above.	No data

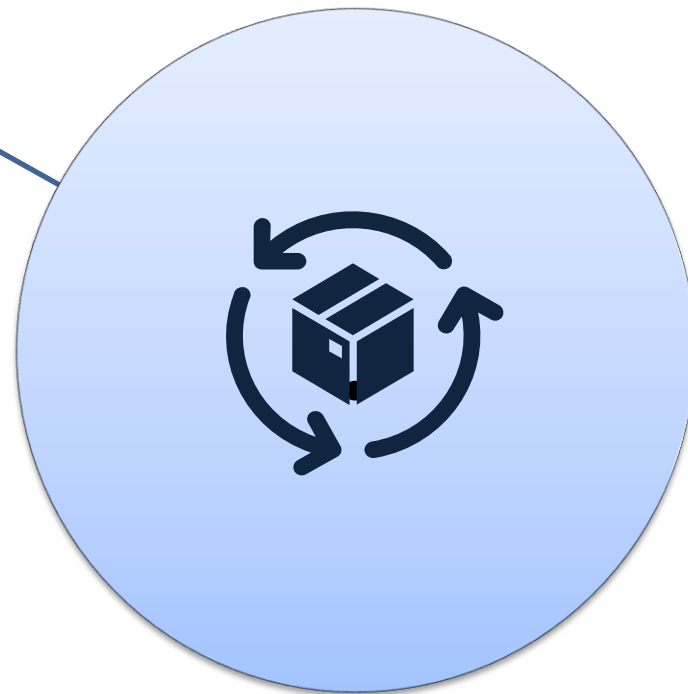


Solution: AI Technology Software



Prevents Theft

Detects theft attempt with the use of motion sensing camera



Seamless Checkout Process

Avoids interruption in checkout operation as suspicious activities are spotted immediately



User Requirements



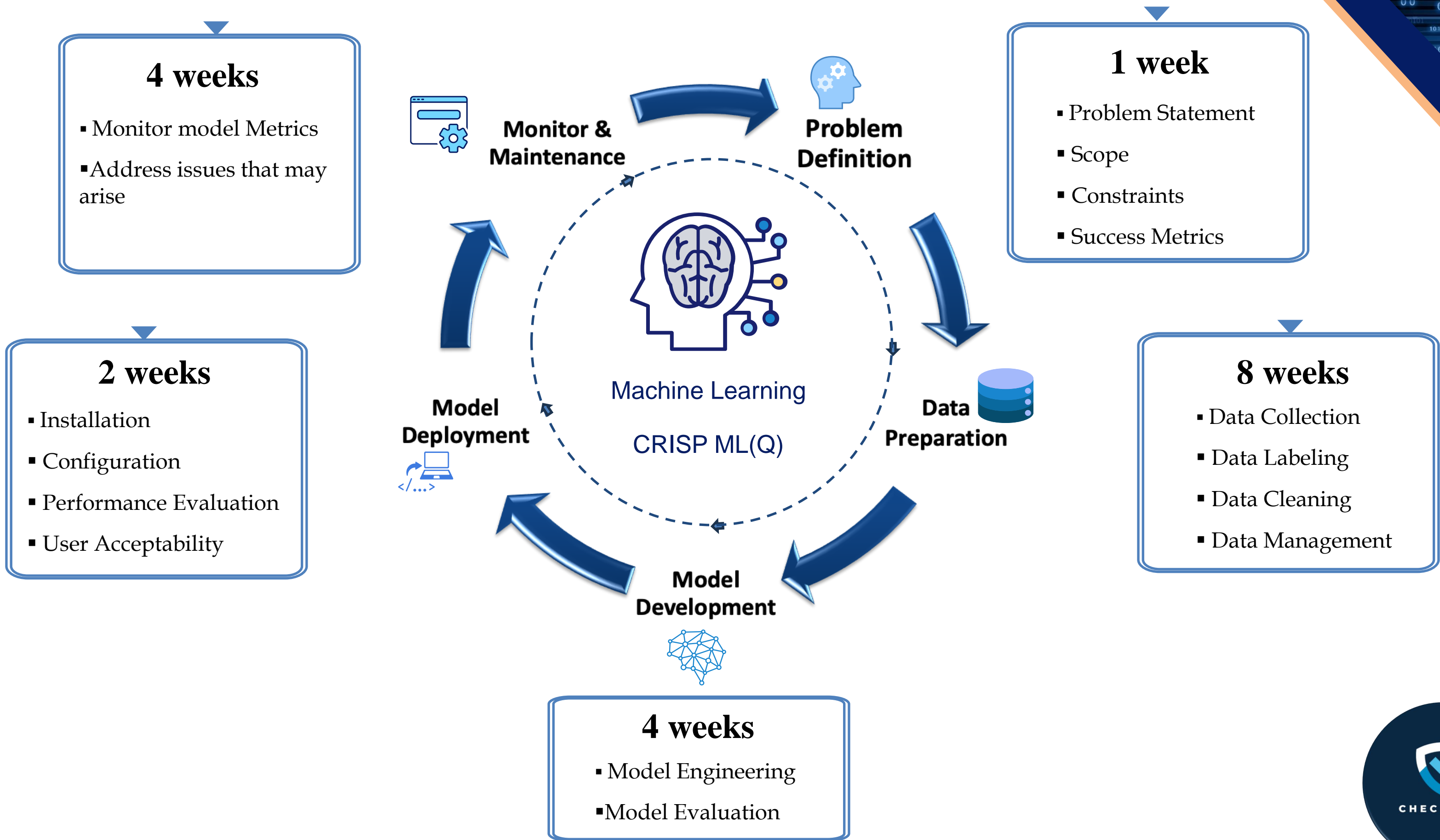
Accurate Theft Detection

Prompt Notification of Suspicious Activities/
Irregularities

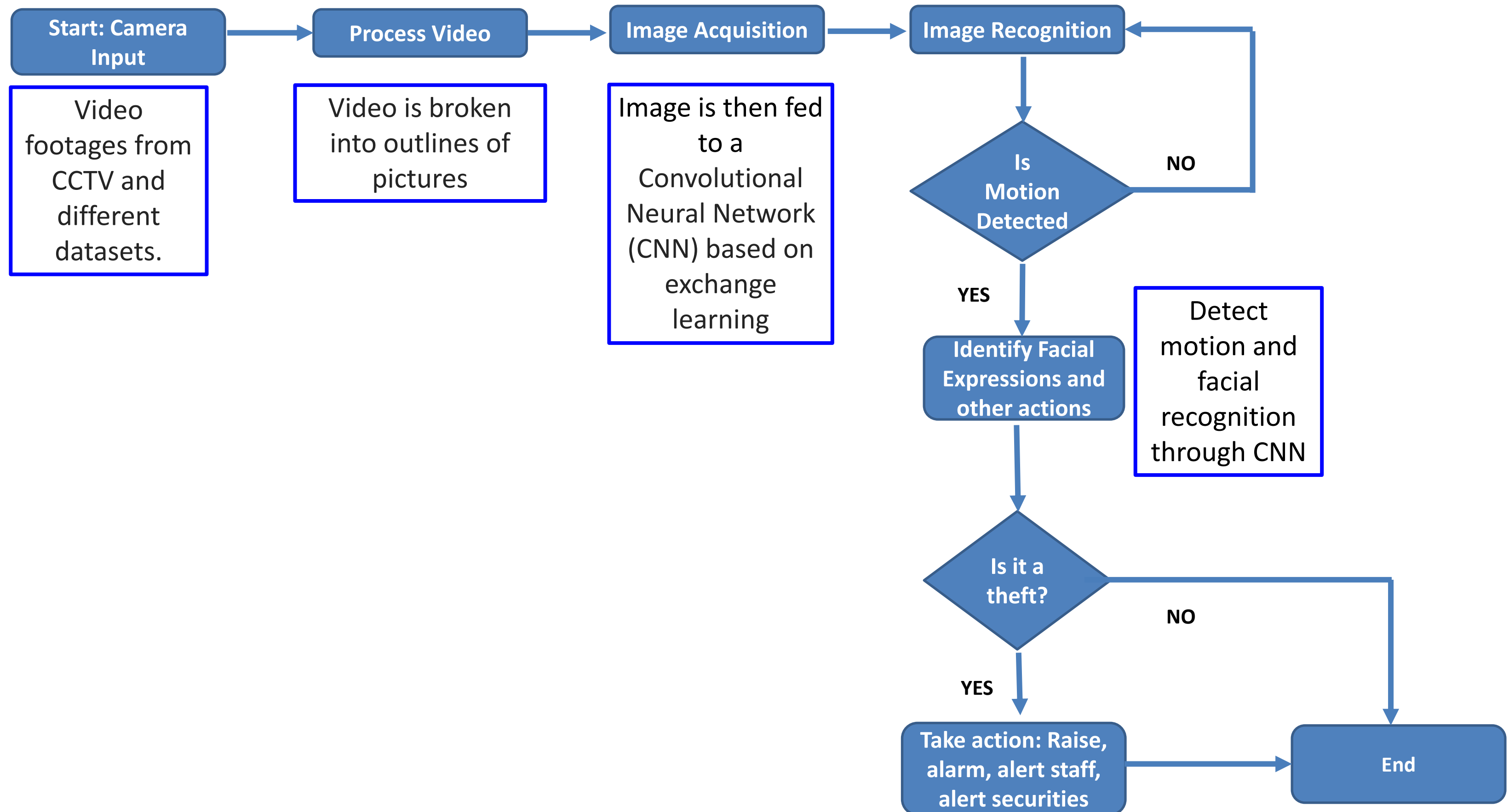
Timely Response to Suspicious Behavior



SOLUTION METHODOLOGY & TIMELINE



PROJECT WORKFLOW

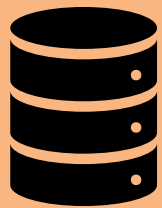


Data Considerations

Population	Type	Source	Timeframe	Variables	Relevance
Video Surveillance Records	Historical	Internal (Walmart's Security Team)	6 months to 1 year	Shoplifting incidents	Yield a breadth of patterns surrounding shopper behaviors
				Normal shopper behaviors	
				Unusual shopper behaviors	
Open-source datasets	Historical	External (Kaggle,Google,etc.)	Past 5 years	Images and videos of well-known shoplifting tactics	Establish a multi-class dataset to detect other forms of theft
Synthetic datasets	Projected	Simulated (Data Generation tool)	Next 5 years	Most probable techniques that shoplifters can employ	Provide effective outcome by not just focusing on predefined actions



RISKS & DEPENDENCIES



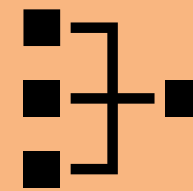
DATA PRIVACY

Consumer data when capturing image/facial expressions



DATA AVAILABILITY

Availability of video footage



SYSTEM DOWNTIME

Software problems and unavailable service



VIDEO QUALITY & DATA ACCURACY

Video analysis may be compromised with poor quality video; Incorrect identification of individuals

WHY IS THIS THE BEST SOLUTION FOR THE CLIENT?

- ✓ Strengthens security measures
- ✓ Streamlines self-checkout process
- ✓ Provides more effective outcome versus existing theft surveillance system
- ✓ Identifies suspicious activities accurately in a real-time manner
- ✓ Reduces future losses, labor costs and expenditures
- ✓ Maintains brand reputation



WHY LAMBDA SHOULD WORK ON THIS PROJECT



Maximizes Return on Investment



Improves Profitability



Innovation opportunity



First of its kind intelligent solution that prevents theft in retail stores



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THANK YOU





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