MICHIGAN STATE UNIVERSITY **Beta Presentation Reducing Shoplifting Using Machine** Learning **The Capstone Experience Team Meijer**

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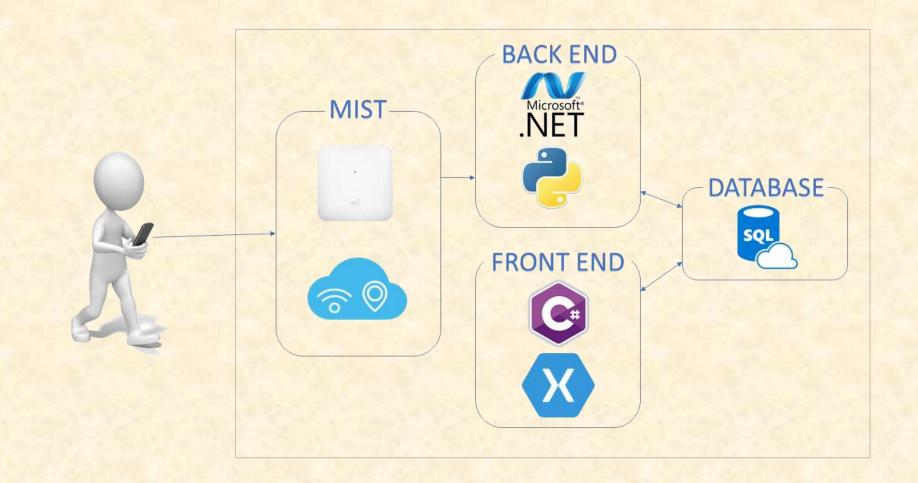


From Students... ...to Professionals

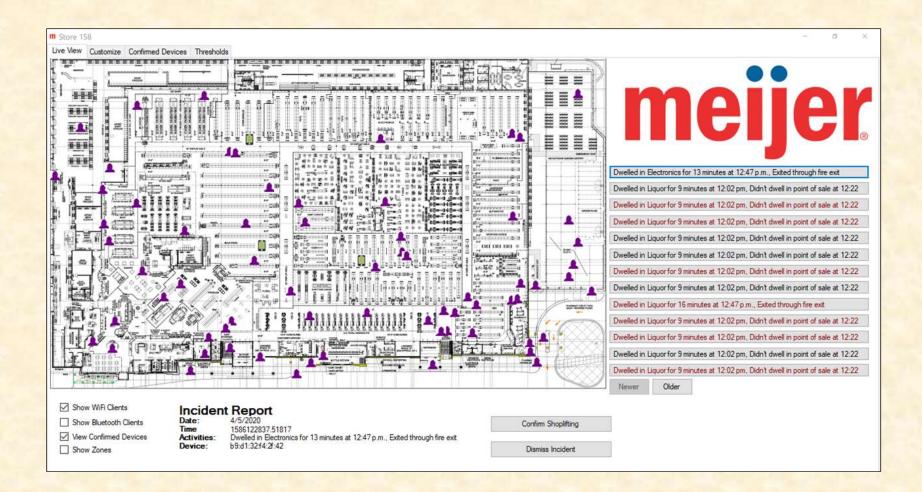
Project Overview

- Monitor shoppers with Mist access points
- Look for suspicious activity
- Identity potential shoplifting incidents
- Send alerts and provide information to resolve incidents
- Monitor confirmed shoplifting devices to prevent further acts of shoplifting

System Architecture



Desktop App



Mobile App Store Selection

7.03 → 📅 79% û 🥑	7:04 🔶 🕈 👘 🖉 🖉
STORE RESOLVED UNRESOLVED CONFIRMED SELECTION INCIDENTS DEVICES	Test store location
	ST999 1997 E Beltline Ave NE, Grand Rapids, MI 49525, USA
	97150
	428 S Shaw Lr, Okernos, MI 48864, USA
	Beta Presentation Site
meijer	
	Carlos and a second
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1	
Welcome	
to	
DOM	
RSML	
in and constant and a second	
CHANGE STORE	and the second se
You are currently connected to store ST158	
1997 E Beltline Ave NE, Grand Rapids, MI 49525,	
USA	
	and the second se
	BACK

Mobile App Resolved Incidents

7.04 +		17 J. 795 & 😶			
STORE BELECTION	RESOLVED	UNRESOLVED	CONFIRMED		
04/05/2020 19:01	23	-			
Confirmed Shoplif	ting				
04/05/2020 19:01	:21				
Confirmed Shoplif	ting				
04/05/2020 19:01	19				
Not Shoplifting					
04/05/2020 19:01	16				
Not Shoplifting					
04/05/2020 19:01	13				
Not Shoplifting					
04/05/2020 19:01					
Confirmed Shoplif 04/05/2020 19:01					
	94 				
Not Shoplifting 04/05/2020 19:01	-0.4				
Not Shoplifting	(4 ⁻⁴				
04/05/2020 19:01	-03				
Confirmed Shoplif					
64/05/2020 19:01					
Not Shoplifting					
04/05/2020 19:01	00				
Confirmed Shoplif	ting				
04/05/2020 19:00	57				
Not Shoplifting					
04/05/2020 19:00	:55				
Confirmed Shoplif					
04/05/2020 19:00	:54				
Not Shoplifting					
04/05/2020 19:00	882				
Confirmed Shoplif	G				
04/05/2020 19:00	:50				
Not Shoplifting	-714 /				
04/05/2020 17:00	380				
< <	3	0			

- li	ncident De	tails
	Device Id	
	95:bb:c3:21:co	1:87
s	uspicious Acti	vities
Dwelled in Spor	and the second se	r 6 minutes at 12:02
Didn't dwe	pm I in point of sa	ale at 12:22 pm
	Date of Incid	ent
	4/5/2020	
	Time Resolv	ed
4,	/5/2020 7:01:2	23 PM
	Verdict	
C	onfirmed Shop	lifting
	BACK	
· (0	100

Team Meijer Beta Presentation

Mobile App Unresolved Incidents

7:04 🕀 🔶		187 al 1	795 a	0
STORE SELECTION	RESOLVED	UNRESOLVED	DEVI	RIMED ICEN
4/5/2020		1		
9:11:32:14:21:42				
4/5/2020				
9:d1:32:f4:2f.42				
4/5/2020				
9:d1:32:f4:2f:42				
1/5/2020				
9.01.32.14.21.42				
1/5/2020				
9.01.32.14.21.42				
4/5/2020				
9:d1:32:f4:2f:42				
4/5/2020				
22:aa:b3:21:od:87				
1/5/2020				
9:d1:32:f4:21:42				
1/5/2020				
9 d1:32:f4:21:42				
4/5/2020				
11:aa.b3:21:od.87				
4/5/2020				
12:aa:b3:21:od:87				
4/5/2020				
32:aa:b3:21:od:87				
1/5/2020				
1 aa b3:21 od 87				
1/5/2020				
12:aa:b3:21:od:87				
4/5/2020				
32:ab:b3:21:od:87				
4/5/2020				
17:ab:b3:21:od:87				
4/5/2020				
<		0	111	

	Incident	Details	
	moluerit	Detallo	
	Devic	e Id	
	37:ab:b3:	21:cd:87	
	Suspicious	Activities	
Dwelled	in Liquor for 9	minutes at 12:0	2 pm
Didn't	dwell in point	of sale at 12:22	pm
	Date of I	ncident	
	4/5/2	2020	
	CONFIRMED S	HOPLIFTING	
	CONFIRMED S	2029-0100-0401-01008-25-	
		PLIFTING	

The Capstone Experience

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Mobile App Confirmed Devices

7:04 ቅ ♥	# 79		2510	9 0 †		u 791.0 🕐
STORE RESOLVE SELECTION MODEN	ED UNRESOLVED TS INCIDENTS	CONFIRMED DEVICES		Inci	dent Detai	ls
a4:d2:21:19:15:04		10 C				
Liquor 11:aa:b3:21:cd:87					Device Id	
Liquor				11-	aa:b3:21:cd:87	7
44:aa:b3:21:cd:87				102	00.00.21.00.0	50
Point of Sale				Susp	icious Activiti	es
1			Dw	elled in Liquo	or for 9 minute	s at 12:02 pm
				2	Zone History	
				Exited Ele Entered Exited Entered	ectronics at 1 ectronics at 12 I Liquor at 12:1 Liquor at 12:1 Liquor at 12:2 Liquor at 12:2	2:04 pm 08 pm 2 pm 18 pm
1					BACK	

What's left to do?

- Set up our webhook on the Meijer site
- Testing on store 158 and tweaking thresholds
- Make aesthetic improvements

Questions?

