MICHIGAN STATE UNIVERSITY

Beta Presentation

Automated Video Workplace Safety System

The Capstone Experience

Team GM

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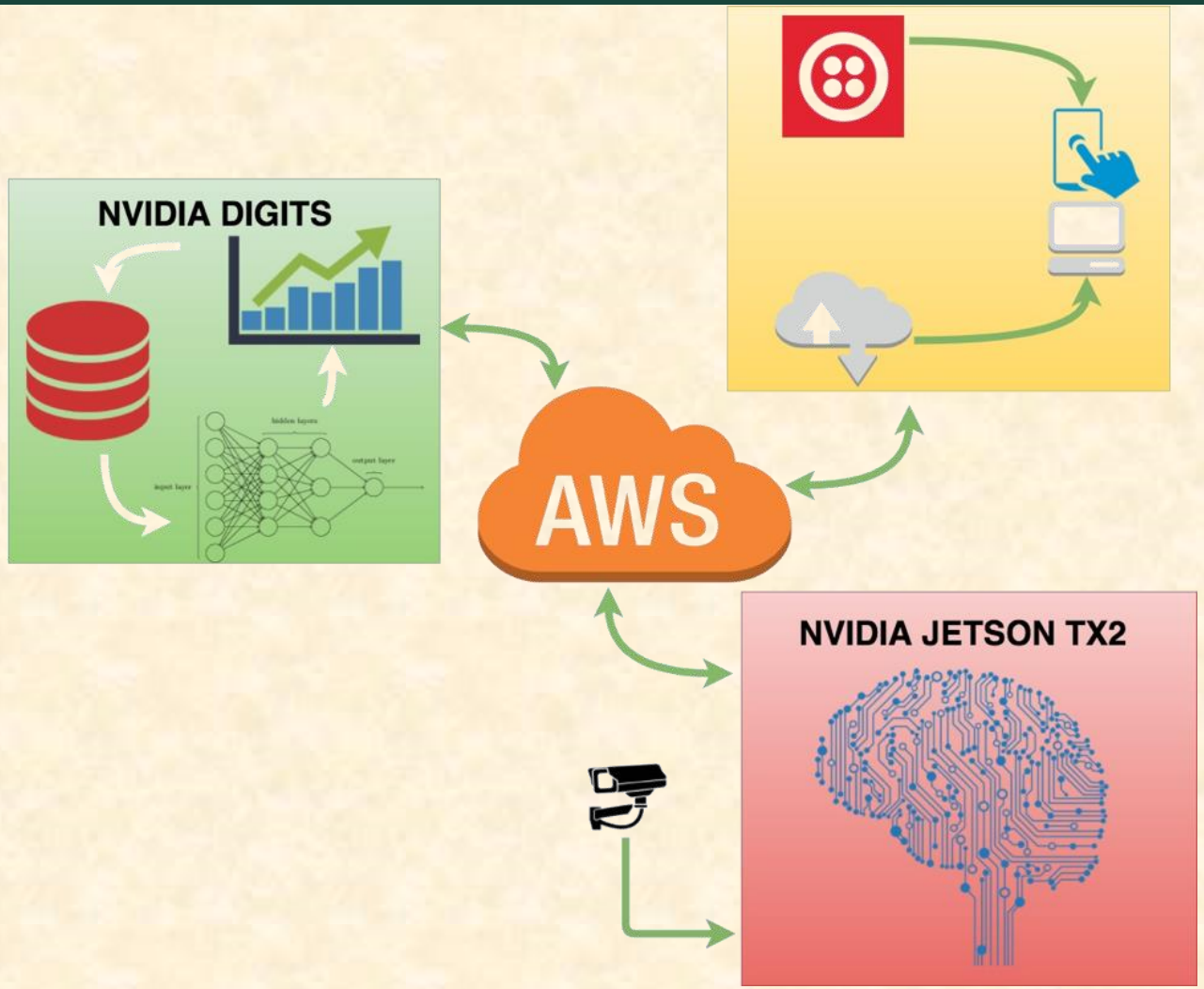
From Students…
…to Professionals

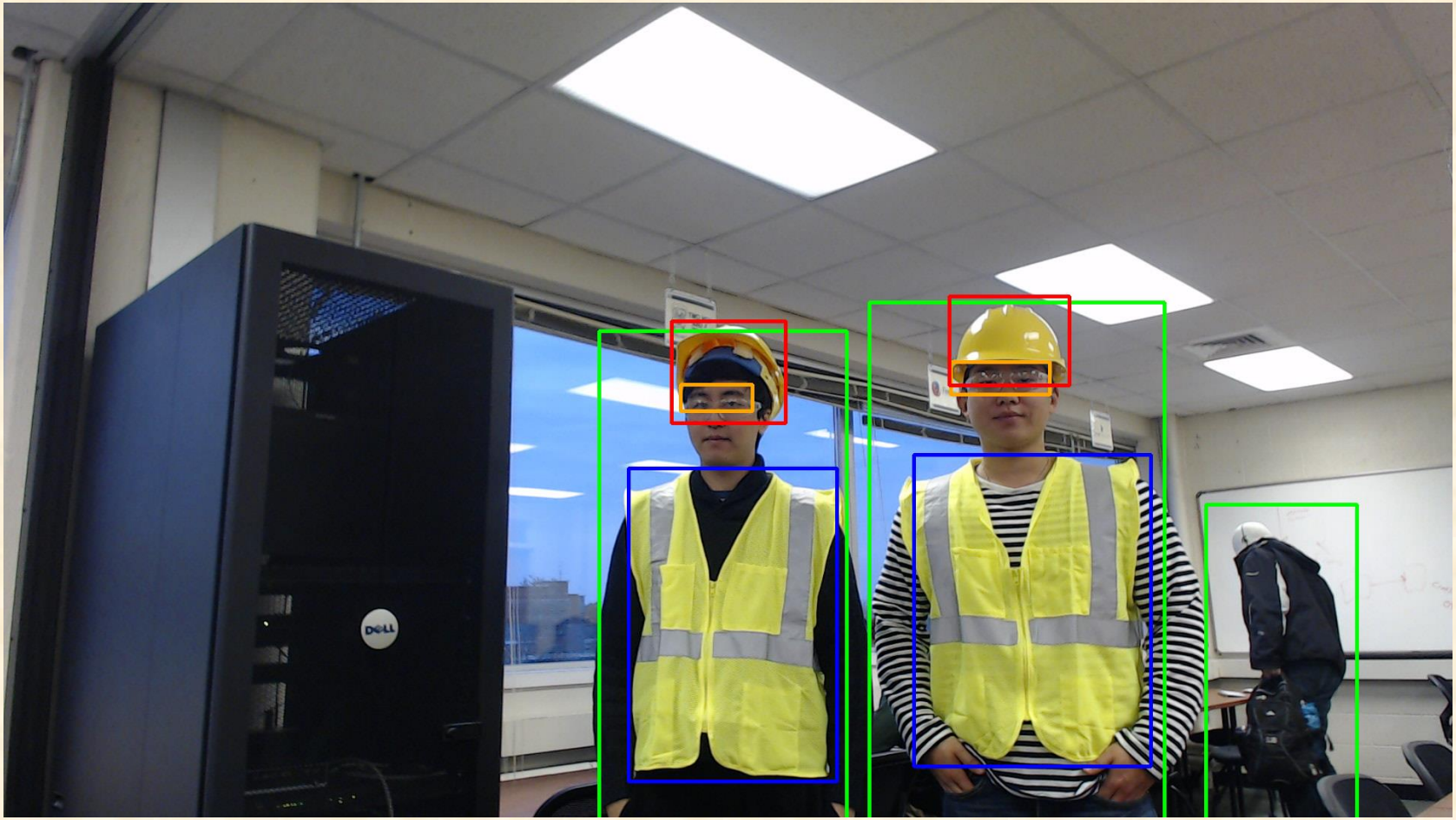
Project Overview

- Use cameras to identify workers missing proper Personal Protective Equipment (PPE)
- Notify safety managers of safety incidents via SMS
- A web portal will provide reporting of safety incidents to help managers identify patterns of concern.

System Architecture



Object Detection

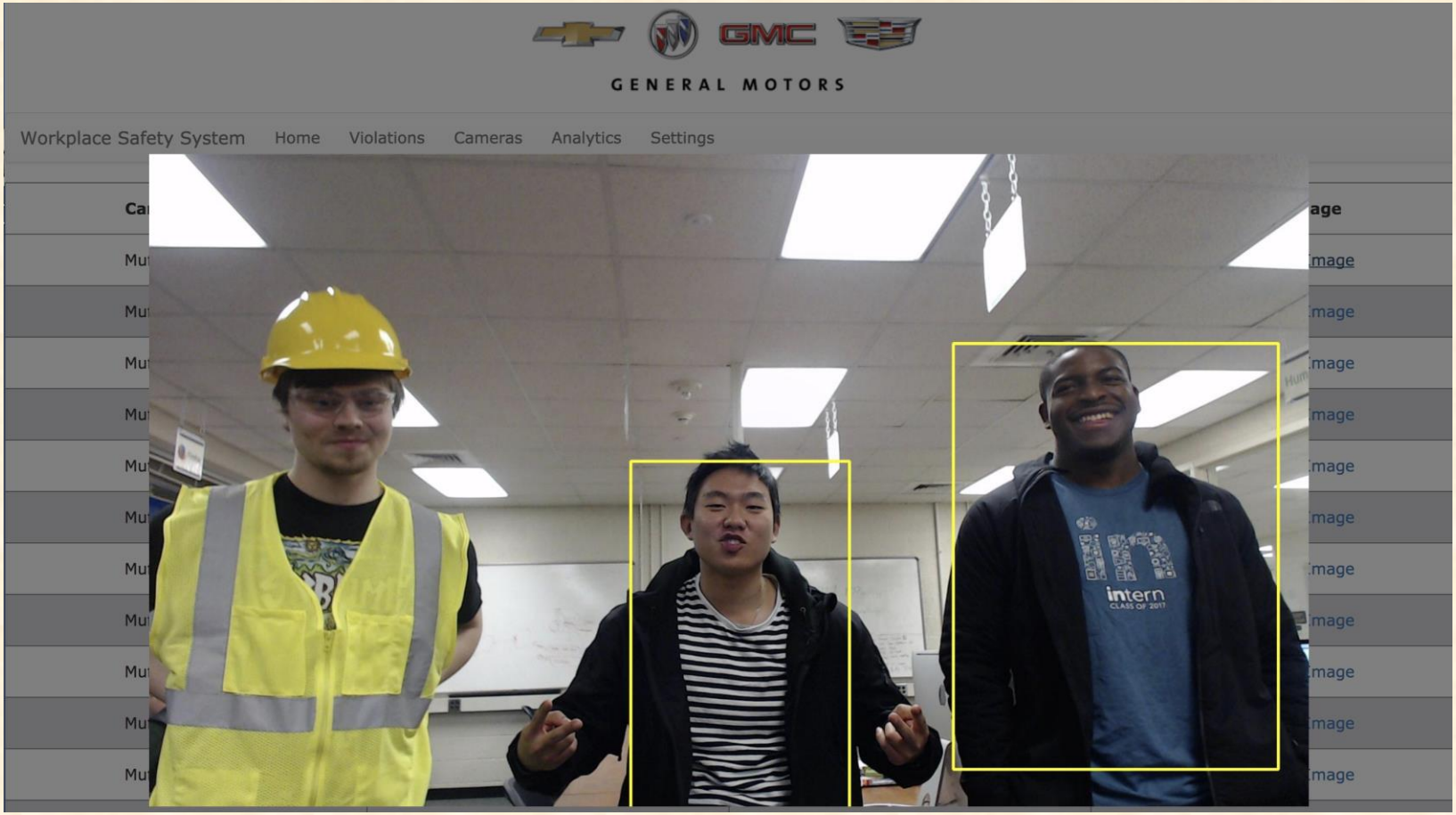


Web Portal - Violations

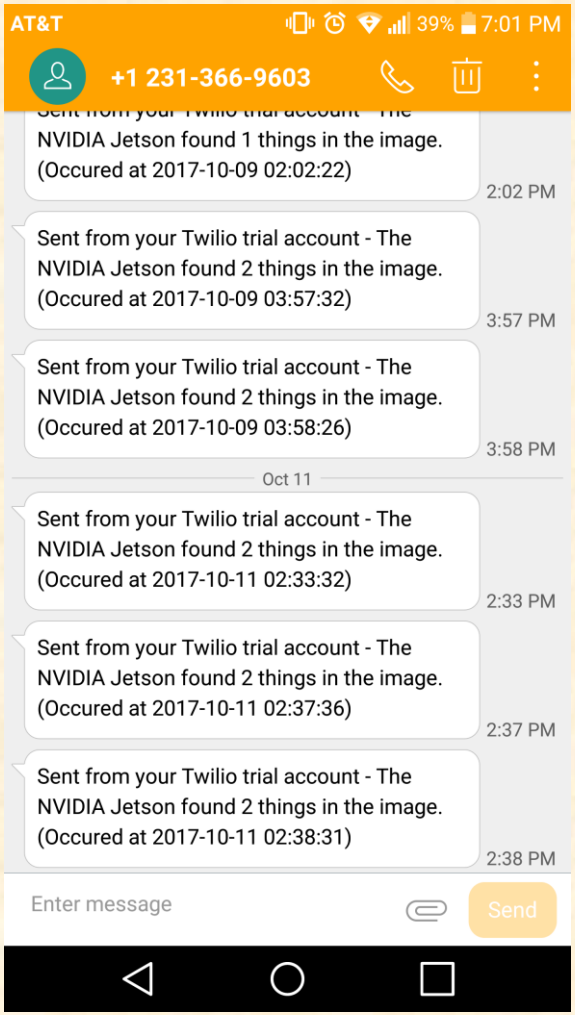
Workplace Safety System Home Violations Cameras Analytics Settings

Camera Name	PPE Violated	Date	Violation Image
CameraA	vest	2017-11-09 14:19:54	View Violation Image
Muffler Rm Entr	vest	2017-11-09 18:02:45	View Violation Image
Muffler Rm Entr	vest	2017-11-10 16:42:43	View Violation Image
Muffler Rm Entr	vest	2017-11-10 16:47:04	View Violation Image
Muffler Rm Entr	vest	2017-11-10 16:48:31	View Violation Image
Muffler Rm Entr	vest	2017-11-10 16:49:17	View Violation Image

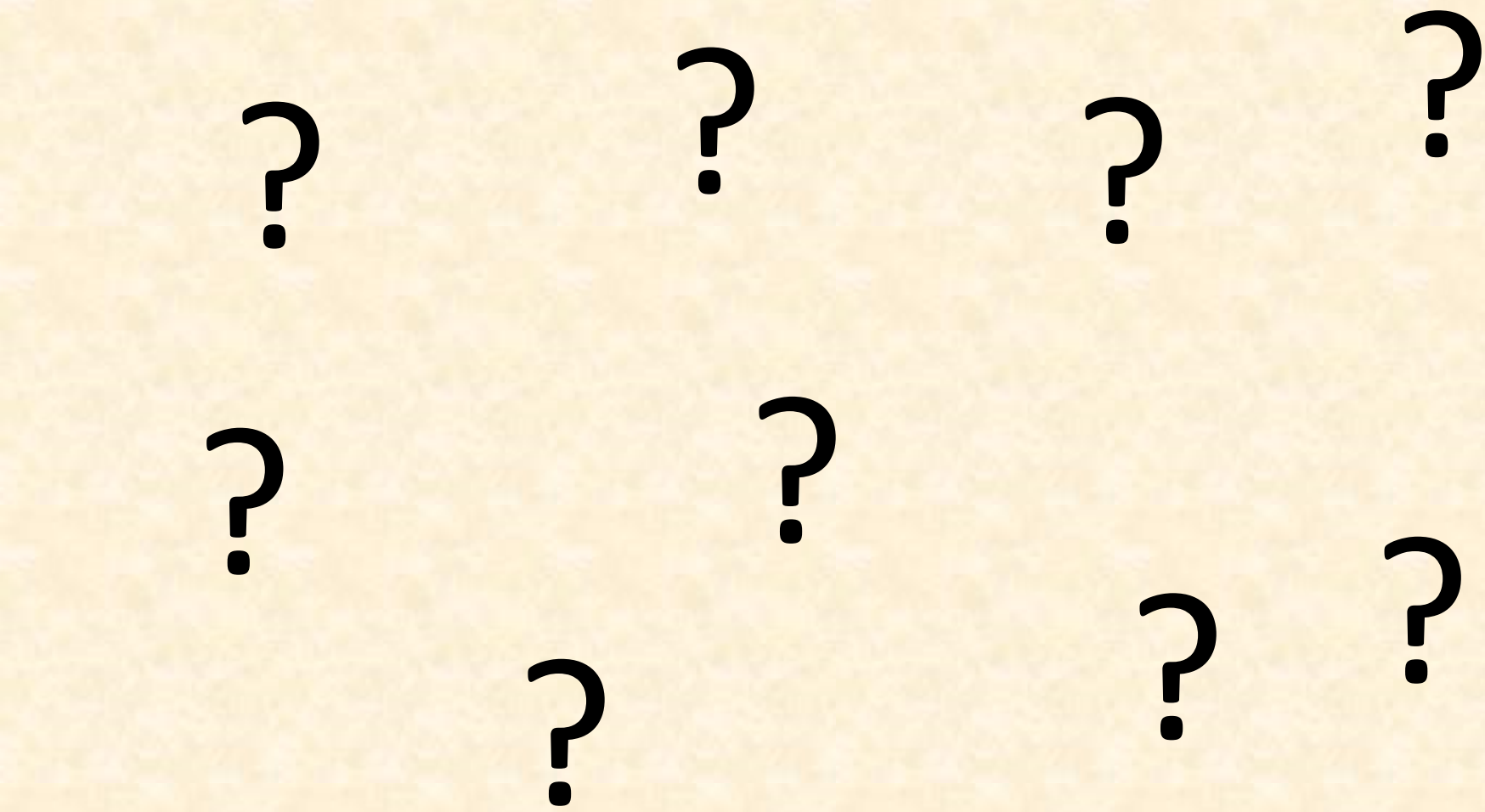
Web Portal - Violations



SMS View


AT&T
39% 7:01 PM
+1 231-366-9603
NVIDIA Jetson found 1 things in the image.
(Occured at 2017-10-09 02:02:22)
2:02 PM
Sent from your Twilio trial account - The
NVIDIA Jetson found 2 things in the image.
(Occured at 2017-10-09 03:57:32)
3:57 PM
Sent from your Twilio trial account - The
NVIDIA Jetson found 2 things in the image.
(Occured at 2017-10-09 03:58:26)
3:58 PM
Oct 11
Sent from your Twilio trial account - The
NVIDIA Jetson found 2 things in the image.
(Occured at 2017-10-11 02:33:32)
2:33 PM
Sent from your Twilio trial account - The
NVIDIA Jetson found 2 things in the image.
(Occured at 2017-10-11 02:37:36)
2:37 PM
Sent from your Twilio trial account - The
NVIDIA Jetson found 2 things in the image.
(Occured at 2017-10-11 02:38:31)
2:38 PM
Enter message
Send

What's left to do?

- Continue refining models
  - Testing for false positives
  - Safety glasses
    - Transparency
- Touch up web portal
  - Analytics
- Video

Questions?