Beta Presentation
Automated Video Workplace Safety System

The Capstone Experience

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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

<table>
<thead>
<tr>
<th>Camera Name</th>
<th>PPE Violated</th>
<th>Date</th>
<th>Violation Image</th>
</tr>
</thead>
<tbody>
<tr>
<td>CameraA</td>
<td>vest</td>
<td>2017-11-09 14:19:54</td>
<td>View Violation Image</td>
</tr>
<tr>
<td>Muffler Rm Entr</td>
<td>vest</td>
<td>2017-11-09 18:02:45</td>
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<td>2017-11-10 16:48:31</td>
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<tr>
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<td>vest</td>
<td>2017-11-10 16:49:17</td>
<td>View Violation Image</td>
</tr>
</tbody>
</table>
Web Portal - Violations
SMS View

AT&T
+1 231-366-9603
Sent from your Twilio trial account - The 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
What’s left to do?

• Continue refining models
  ▪ Testing for false positives
  ▪ Safety glasses
    ○ Transparency

• Touch up web portal
  ▪ Analytics

• Video
Questions?