Beta Presentation
Trailering Safety Using Computer Vision

The Capstone Experience

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Fall 2023
Project Overview

• Bosch: leading and worldwide German supplier in automotive equipment and services.
• Ensures vehicle has properly hitched trailer.
• Prevents:
  ▪ Injuries
  ▪ Vehicle Accidents
  ▪ Vehicle Damages
• Analyzes image or video for component identification.
• Assigns pass/fail score based on checklist.
System Architecture
Incomplete Hitch
Complete Hitch

Chains Connected: PASS
Hitch Connected: PASS
Tongue Locked: PASS
Cable Connected: PASS

COMPLETE
This Frame: 1
Total Frames: 1
Augmented Incomplete Hitch
Live Video

FPS: 11
Pass
wire_attached 0.83
chain_attached 0.79
latch_closed 0.80
pin_closed 0.87
What’s left to do?

• Stretch Goals
  ▪ Live Video Analysis
  ▪ Kubernetes/Scalability
  ▪ Video Download
  ▪ Metrics Plot Display
  ▪ Progress Bars in UI

• Other Tasks
  ▪ Model Tuning:
    ○ Adjust Confidence Values
    ○ Cross-Validation Training
  ▪ UI Light Cleanup
Questions?