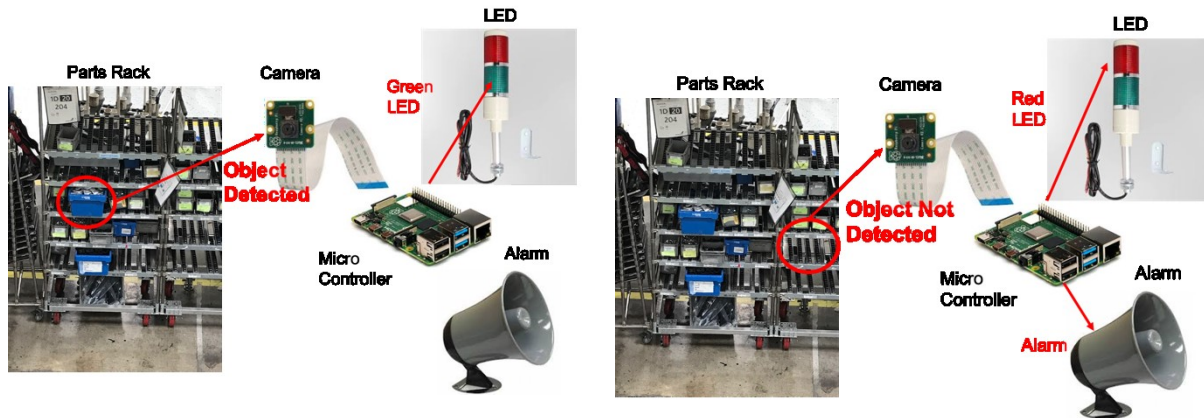


Projektförslag för kandidatarbeten vid Elektroteknik (E2)

## EENX15-21-32 Global Capstone Projects with Chalmers, Penn State and Volvo

Computer Vision / Image Recognition



### Background

In our current logistics process we rely on operators manually requesting parts be brought to the line. We would like to use computer vision to monitor a logistics rack or specific part container, to trigger part replenishment when a container is missing.

### Assumption

Create hardware and software capable of:

- Visually identifying an object using camera and image recognition.
- Using the identified object to trigger an output i.e. LED light, alarm
- Use microcontroller (Raspberry pi, NVidia Jetson Nano)

### Experimental setting:

Perform a test with one Volvo specific object (i.e. parts bin) and one of the groups choosing.

### Expected outcome

- Hardware and software capable of performing scope activities.
- Electrical Schematics
- Step-by-step process documentation (image recognition guide)
- CAD File (component housing) - optional

**Suitable background:** TKAUT, TKELT, TKMAS, TKDAT

**Group size:** Tre studenter från Chalmers och tre från Penn State

**Number of groups:** 1

**Prerequisites:** Basics of Automatic Control, Mechatronic Systems, Programming in Matlab and C/C++

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