

# USE CASE

## MONITORING PALLETIZING PROCESS



### CUSTOMER

Tier 1 Automotive Manufacturer

### NEED

- Solution to monitor rim palletizing and alert workers in case of pallets with mixed rims.  
Solution need to conform with EU privacy standards.

### OUTCOMES

- Reduced shipments of incorrect/mixed pallets
- Fewer costly returns of whole pallets
- Reduced work and cost for the customer related to returning mixed pallets ensuring continued good relationships

### CHALLENGES

- Due to human error mixed pallets were occasionally shipped to customers which were then returned and created extra cost for both the manufacturer and the customer
- Reliable monitoring in low light situations
- Due to privacy concerns, employees' heads, hands or arms could need to be blocked before the images are analyzed

### PROCESS

- Development of four convolutional networks:
  1. Detection of location of the pallets on the floor
  2. detects rims on the pallets,
  3. identifies the rim model
  4. detects and blocks out human shapes.

### SOLUTION

A high-resolution camera records the pallets. The images are analyzed with four convolutional networks in series to detect incorrect rims and block out human shapes.