COLLISION AVOIDANCE SYSTEM BASED ON AUTO ZONE-DIMMING HEADLIGHTS

CPG-160 | CSE'24 | Mentor : Dr. Shalini Batra, Dr. Harpreet Singh

THE PROBLEM

Compounding the issue of **BLINDING GLARE** is the Troxler effect. The **TROXLER EFFECT** leads to a momentary state of visual impairment, akin to a fleeting eclipse of sight. A driver's reaction time can be elongated by a consequential 1.4 seconds.

OUR GOAL

HOW DO THESE HEADLIGHTS WORK?

STEP 1: VEHICLE DETECTION

ⓘ The YOLOv8 model has been fine tuned using the collected night-time traffic dataset.

CAMERA

Fine Tuned YOLOv8

MORE RESULTS

BOUNDING BOXES

Bounding boxes locations are forwarded

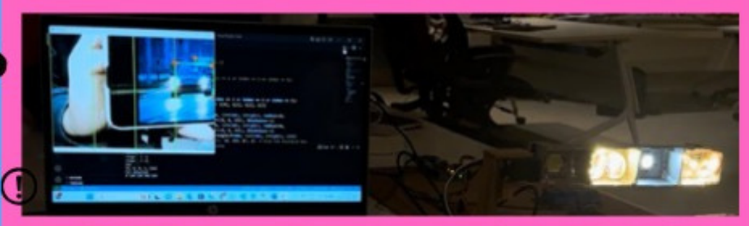
STEP 2: POSITION ESTIMATION

Input image is divided in 4 regions. → Regions where the bounding boxes lie are computed

ⓘ 4 Regions because our prototype has 4 LED's in matrix

SCAN FOR SOURCES

STEP 3: LED MATRIX CONTROL



ⓘ CAR in Region 4 → LED 4 OFF

COMPLETE SETUP

1x4 LED MATRIX

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