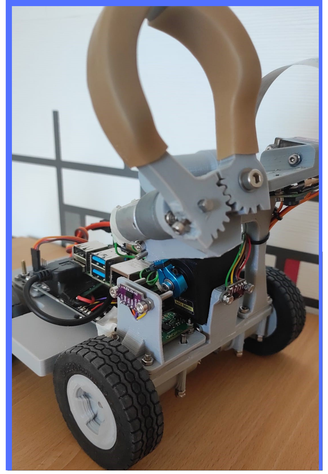
EVB ROBOCUP | BITFLIP_ROBOCUP22 | KRAEMER123.DE | http://github.com/saegersven/robocup23

BITFLIP

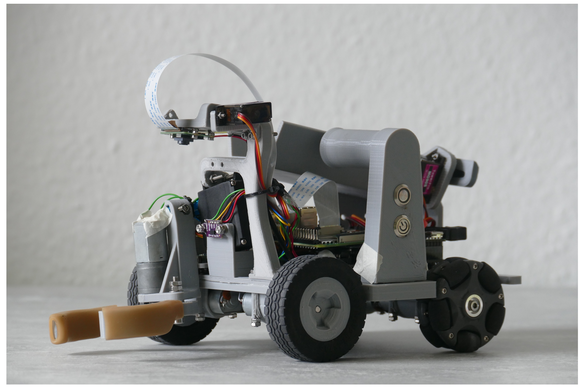
OUR ROBOT

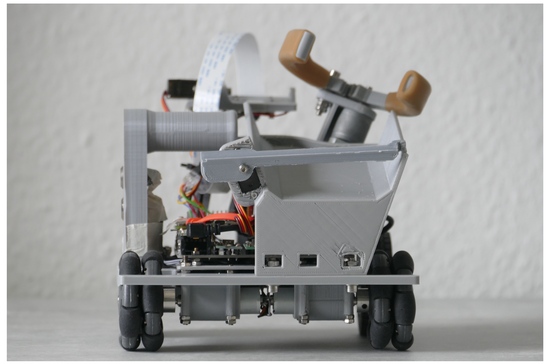
We use camera to follow the line, detect intersections, detect the rescue kit and to detect red and silver stripes. We also use camera to detect victims using a neural network that we trained on 50,000+ images.



HARDWARE

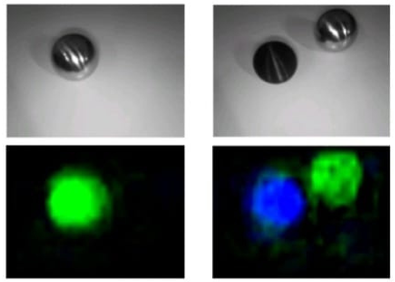
Main Controller: Raspberry Pi 4B
Camera: : Raspberry Pi Camera V2
Sensors: 3x VL53L0X Distance sensors
Movement: 4x Pololu 20D (DC Motoren) and 3x Servos





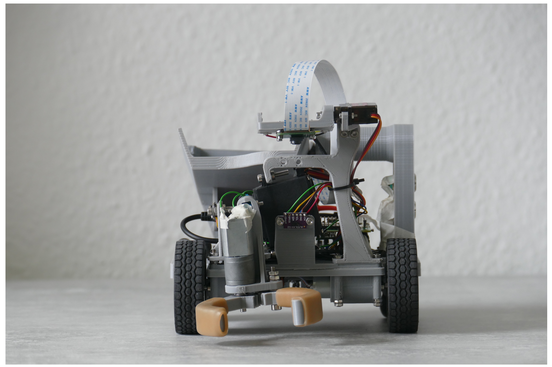
NEURAL NET

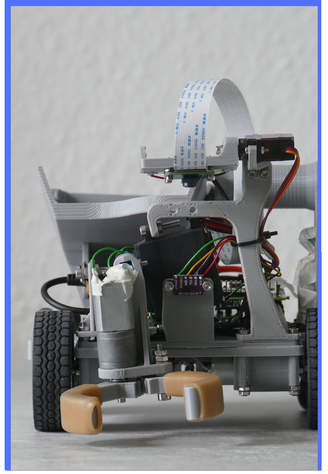
The neural net was mainly inspired by the YOLO model. The robot creates a "heat map" which can be processed further to obtain the actual victim position. It takes in a 160x120 black-and-white image and outputs a probability map of the two diffrent calsses of victims: dead and alive.



ABOUT US

We are Team BitFlip (Jan-Niklas Freund, Lukas Krämer and Sven Saeger) from Germany. We have been participating in local and international RoboCup competitions for multiple years now.



OUR ROBOT

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