

# Neuro Neuer

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## Idea



Figure 1: Project Setup

The Neuro Neuer is an intelligent goal keeper, he will keep an eye on the ball (eDVS) and try to keep his net safe.

Based on the data received from the (eDVS), he will track the ball position and velocity. From this data set, he will use a neural network to predict, in which direction he needs to move.

## Concept

We will take advantage of the event based sensor to extract the position (cluster detection) of the ball. The position  $(x,y)$  and velocity  $(dx,dy)$  vectors will be fed as inputs into the neural network and the servo position in degrees will be our output. The neural network will be trained on the data several times. Afterwards the network will be able to predict the desired position of the servo.

## Hardware

- Wooden frame (about 40cm x 80cm, height adaptable)
- Servos
- Arduino Microcontroller (eventually for servo PWM control)
- DVS

## Software

- Main part in Matlab
- Arduino IDE when needed