



PLACIS project 2015-2016



BALL TRACKING CAMERA - COGIBOT

The enterprise

COGIBOT is a French company specialised in mechatronics and focused on the research and development of robots with an educational purpose.

The team

Four students - two from Supm6ca and two from ENSEA - were engaged to work on the project.

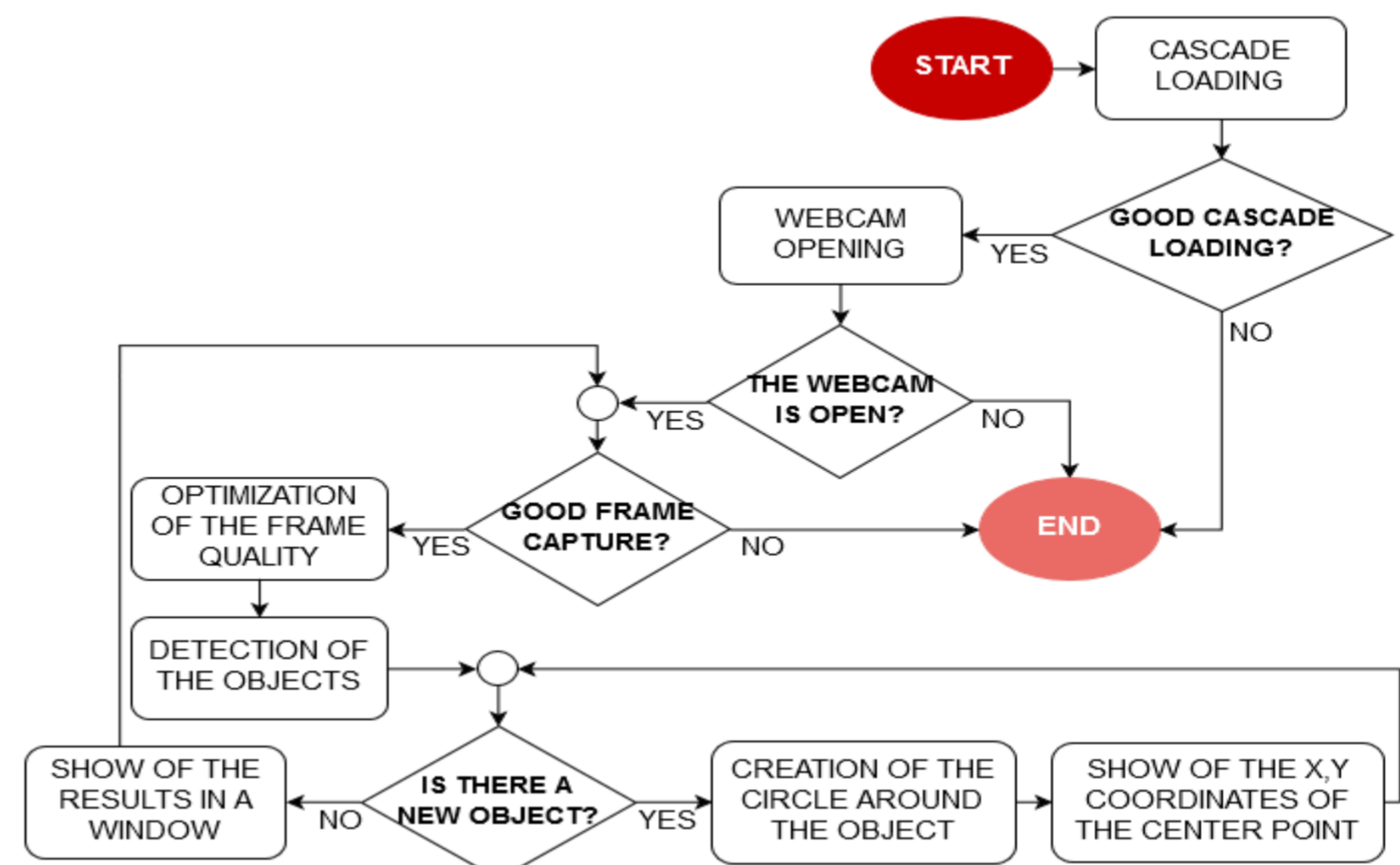
The project

The project is aimed at developing a **rotating camera** - fixed on two servomotors - able to follow the movement of a ball in a robotic football match, in order to project the game on a screen.



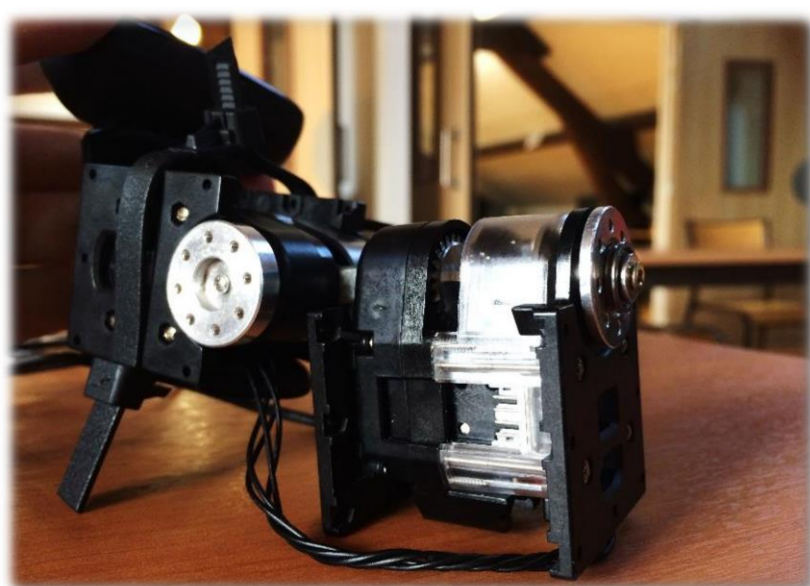
Ball detection

This module is based on the **HAAR function**: it is able to detect and track the ball after a **training phase** in which it learns what it is, thanks to the elaboration of several images containing the ball (positives) and several images that do not contain it (negatives). After the training, the function creates a **cascade classifier** that will be responsible of the ball recognition in the program.



Motors movement

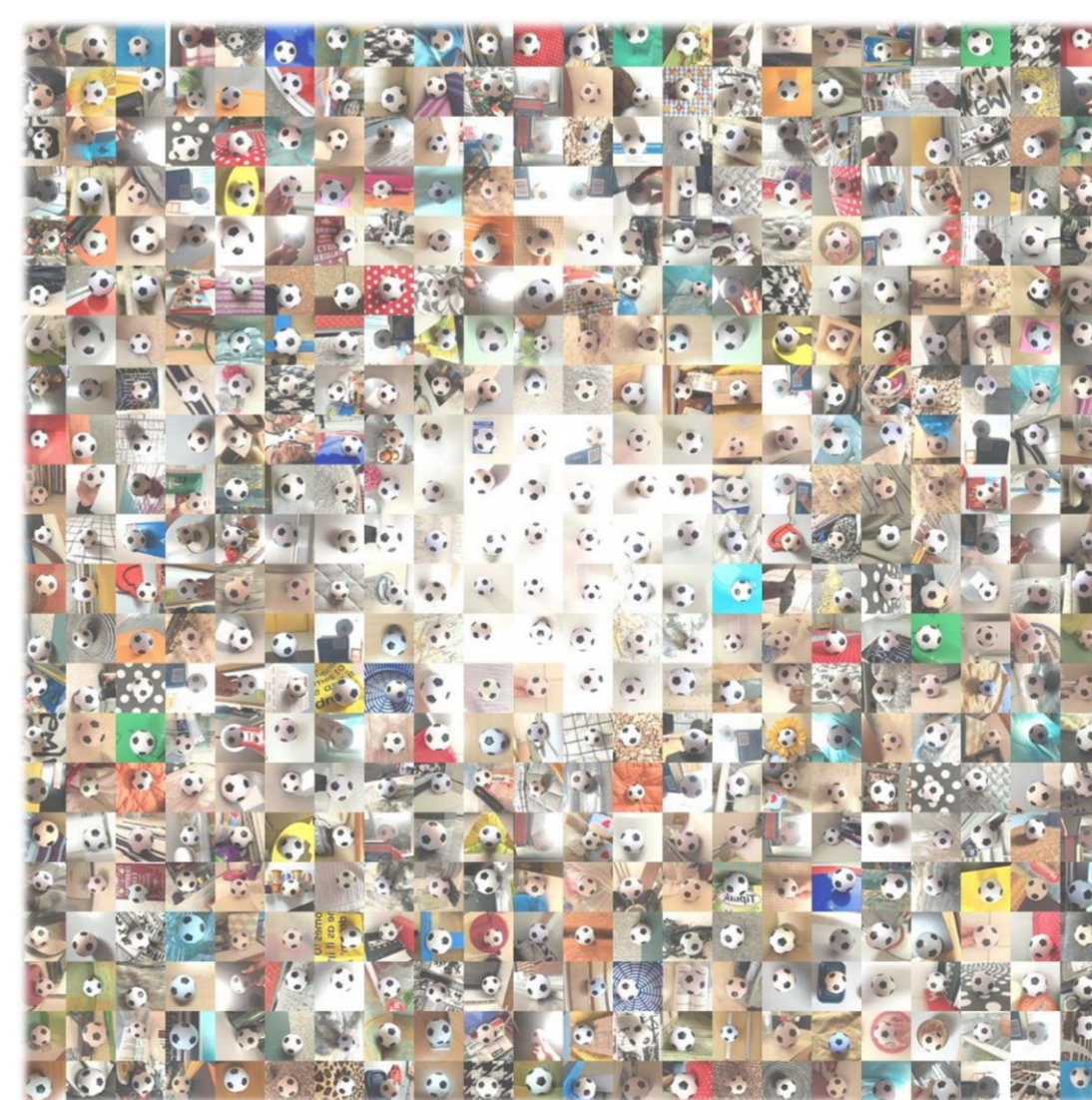
Work in progress by ENSEA team.



The **result** is really interesting: the program is able to recognise and follow the ball in the playground, well enough not to confuse it with other objects.



Negative images



Positive images

