# Explanation Technical Design:

The functional design and all associated files can be found on our public GitHub Repository under the MIT license. The repository can be found by using the following link:

<https://github.com/BastiaanvdB/Dataset-groep-1---Paddle-Person>

Two functional designs can be found in this folder. The first one is a class diagram of the python scripts which are used for object detection and the calculations.

In the python scripts consist of 10 classes total. Each class has its own priority, this way its very organized and separated. These classes take videos or images as input and process them (*videos gets processed in frames*) in a manner that all the correct classes and their coordinates are returned. Then, using the width of the paddle as reference width, we calculate all the distances needed for our data and return the data. The processed images and videos are also saved for later retrieval.

## Golang API

The Golang API solution consists of 17 classes, 12 packages, and 10 annotations. Together, they make it possible to send a video or picture (video stream is still a work in progress) to verify them with the Python scripts specified above. The API replies back with a "GO" or "NOGO" response when a picture is sent for verification during training. If the picture receives a "GO" response, a session key is created, and the API will provide this key to make requests at the stream endpoint. At the stream endpoint, the request will be processed, and the stream key will be checked for authenticity and previous usage. If the checks pass, the Python stream script will start, joining the video room to capture the real-time video stream from the user and process it to provide feedback to the streamer.