

 INDUSTRIALES ETSII UPM	PROJECT MEETING MINUTES			
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Project Information

Customer	UPM	Name	<i>Driver Drowsiness Detection</i>
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ASSISTANTS		
Name	Project Position	Registration No.
Josep María Barberá	Programming Manager	17048
Micaela Cabrera	Validation Manager	23023
Jorge Guijarro	Management Responsible	23075
Gustavo Maldonado	Documentation Manager	23102
Ivonne Quishpe	Technology Manager	23146

INFORMACIÓN MEETING

Date	30/11/2023	Start-End	9:45-10:45	Location	Online
Objectives	Check the progress made				

ITEMS TO BE DISCUSSED	
Website Design	Finally, only WebFlow has been tested as it was the only one that allowed to work for free. We still need to add the resources and some details.
Neural Network Eyes (Training)	Both networks (eyes/mouths) were trained with input images of size 64 x 64. This first network was trained with TensorFlow. In order to work correctly, the eye position had to be cropped and worked with directly. In addition, it was tested to "erode" (filter) the image to see the pupil. It works well for open eyes, though not for closed eyes.
Mouth Neural Network (Training)	An attempt was made to apply the code for eye segmentation presented at the previous meeting (implementing it for the mouth) without success. This is because the xml file for "mouth" was only trained for closed mouths. We opted to crop the lower part of an image at the position where the mouth should be present. Next, we tried to perform an image contrast: pixel comparison, the darker ones corresponding to the open mouth. In this way, through different "Kernels" it could be

	<p>determined when a mouth is open or not. This option is not feasible for mouths of different sizes.</p> <p>We tried to train a neural network to detect mouths: For this purpose, it is proposed to elaborate a network with YOLO with a Dataset (Yawn/No Yawn). Satisfactory results are shown for both open and closed mouths.</p>
EAR and MAR Neural Network	A facial mesh was implemented that detects the main LandMarks, both eyes and mouth.

TOPICS DISCUSSED

Those agreed in "Items to be discussed".

COMMITMENTS AND AGREEMENTS ADOPTED

No.	Description	Date of Application	Responsible	Expiration Date
0	Website Design	30/11/2023	Gustavo Maldonado Ivonne Quishpe	04/12/2023
1	Neural Network Eyes (Redesign and Implement video)	30/11/2023	Micaela Cabrera	04/12/2023
2	Mouth Neural Network (Implement video)	30/11/2023	Jorge Guijarro	04/12/2023
3	EAR and MAR Neural Network (Implement video)	30/11/2023	Josep María Barberá	04/12/2023

NEXT MEETING AGENDA:	YES	X	NO	Date	04/12/2023
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REMARKS

Due to the high workload, last week's meeting was postponed to this one.

PREPARED BY: JORGE GUIJARRO TOLÓN. RESPONSIBLE FOR MANAGEMENT