This experience was very enriching. In it, I learned how to work in a team. I also understood the method in which one works in an investigation. Like, for example, how to select an article on which to base my work and how to experiment. Also, I learned how to write a scientific article. I understood how this is structured, how to select what is imported to communicate well the work, the conventions and to cite.

However, the journey to our goal was filled with problem. At the beginning the selection of the topic was not easy, due to the inexperience in the field, so we appeal to the head teacher for ideas.

We spend an entire semester in our first project idea, but with little to no progress. This first idea consists on a sign language decoder based on a neural network, it was too difficult to archive for a lot of reasons, mainly caused by the lack of data needed to train the neural network and how difficult it was to collect new data. Plus, the fact that there are a lot of different sigh languages depending on the country which made thing more difficult. However, it helped us to learn how to use and write a neural network on PyTorch, also to learn how to use yolov3.

Then after we moved to the next and final idea, the fish classification and length calculation based on computer vision and artificial intelligence, we met with the same problem as the previous idea, the lack of data. Originally when we spoke to the teacher, we though that a data set will be provided, but in the end what we though did not happen, so we decided to get the data. However, this time the data can be obtained with more ease, but for it we must spend a lot of time to get them. Also we spend a lot time on a neural network, yolov3, that won’t be used because the machine that will be used cannot run the program at a reasonable speed.

Others problem that happened during the project regarding to the raspberry pi is that we don’t know how to use it and the fact that lot of the python libraries must be installed manually didn’t help us. For example, we spend two to three weeks trying to install opencv2 in the raspberry and other two weeks installing PyTorch, and in the process the raspberry pi memory got corrupted, delaying our plans. Plus, the camera that is attached to the raspberry broke, so we had to wait a week until we could buy a new one. And last but not least important, the fact that the raspberry pi process capability is not very high, make us spend more time try to make image that is shown in the GUI at a decent frame per second so the user can see what the camera is capturing with ease.

Also, while testing the prototype near the deadline, we find out that the original method that we use to get the contour of the fish, what heavily influenced by the ambient lightning, so we had to spend more time to find a better solution to this problem. other problem we encounter in the test, is that the network was over fitted and to prevent it we had to re train the network so the test had to be postpone week.

All in all, we managed to resolve all of them, and in the end the project was done successfully before the deadline.

Regarding the competition, it was very helpful. we learned how to communicate our work quickly and concisely, at the same time, it helped me to realize the mistakes we make in the presentations, so we don’t repeat them in the future. we also got to see projects from other students, which were interesting.

But this process was not done without, inconvenience, especially for me, I have a language problem, and doing a presentation in the other language is very difficult even if I have a deep understanding in what I am talking.

Also, something that make me confuse, is that, during the presentation the presentation one of the judge teachers ask us about mobilenet and said that it is not an architecture but a method, but when I read the paper about it, it clearly is a neural network architecture and not a method. So I’m not if the paper that I read is wrong or the teacher.

In the end, I’m satisfied with the result of the project however, I know that there is plenty of room for improvement that due to the time limitation we couldn’t do. For example, have more classes to classify which can be solved with a better dataset made by people that are more related with the topic, which could prevent a lot of the over fit problem that we have. Plus, to consider the questions made by the teachers during the competition, that we didn’t thought about during the process.