0.1 Context

The outbreak of the COVID-19 pandemic tested the entire world on several levels and changed the concept of what is "normal" thereafter. The devastating health, economic and social consequences that COVID caused, spanned a need to develop novel solutions, for almost every aspect of our lives, that facilitate the adaptation to the new world we're living in.

Educational systems were no exception. In the midst of the pandemic, governments around the world forced institutions to shut down and stop the customary in-person regimen of teaching. By April 2020, most universities transitioned to an adapted remote learning [2] that lacked proper support due to the unanticipated nature of the events, leading to new challenges, in particular, the legitimacy of moments of evaluation performed remotely. To counter this problem, different approaches can be taken, namely, changing the method of evaluation, suppressing it altogether [1] or, when possible, implement a continuous monitoring solution such as TrustID ref?.

However, there are still unresolved issues that must be addressed in order to implement an end-to-end solution capable of assuring the success of such systems. One core aspect of them is the face verification task, therefore, the data obtained directly influences the performance.

Due to the purpose of application, and although the capture of image is consensual, what is obtained can be classified as from an unconstrained nature. Considering that it is expected for the system to be executed in a laptop or a smartphone, the capture device and/or computational power might not be ideal. The more probable capturing devices will be a webcam or the smartphone's front facing camera, so a high variation in pose, resolution, illumination, etc. is not unforeseen. Another detail that must be considered is the processing power available to execute the system, and it is common for the equipments used to have a deficiency of it[1], which is not appropriate for high demanding models that, despite the more accurate results, will result in a greater computational overhad.

In conclusion, the method of choice must take the aforesaid into consideration and be a trade-off between accuracy and computational strain, while also being invariant, to a certain degree, to the posed challenges of capturing the data.

0.2 Dissertation structure

[1] According to the February 2023 Steam hardware survey, roughly 5% of its users do not have a dedicated GPU.