Document of Self Reflection

In this document I will be thoughtfully analysing my performances over the whole project period to learn what I did well and what I can do better so that in another academic or professional environment I will fare better and produce better quality work in a disciplined manner.

My project is based on Human Activity Recognition in videos. It is a prominent aspect of Computer Vision with several interesting real-world applications. So, on the face of it this interested me a lot and encouraged me to take on this project. The only criteria were to specify, choose and implement a methodology that recognises human activity in videos and everything else was left to me such as choice of datasets, software to use and how ambitious to make the project.

I was successful in devising more than one specific methodology and then implementing them on various databases (datasets). I used three datasets called KTH, UCF 50 and hmdb51. All three are prominent datasets in Human Activity Recognition with different characteristics. I was able to get great results on these sets albeit using less than the full number of classes in UCF 50 and hmdb51 due to my own resource/computational limitations.

I was able to vary parameters successfully also and learn first-hand how each parameter affected each neural network with all working quite differently at times but overall showing general patterns. Implementing random search was also a good decision on my behalf as it streamlined the hyperparameter tuning process.

I also did a lot of research beforehand to understand the whole research area of Human Activity Recognition within Computer Vision. Including non-deep learning methods such as Optical Flow. This fulfils the requirement "Understand the research area of the project and its context" in the project brief.

So overall, I would say I fulfilled the main specified criteria of my project very well. However, this is partly due to the fact that the brief left me to make more of the decisions. In that regard perhaps, there is more I could've done to make the project more ambitious. For example, implementing a different method for HAR that is not deep learning then comparing it to deep learning. But overall, I still made some ambitious decisions such as developing a pre-trained model to compare to and training and testing all three models on two different datasets respectively.

The project brief I was assigned was ironically quite brief. This is so that the student can make most of the decisions themselves on where to take the project as this would lead to a more interesting experience rather than just do everything my Supervisor wanted me to do. However, this is exactly where my weakness lays. When everything is given to me in clear steps then I can comfortably work through the instructions and in good time. However, when it is a bit vaguer and more power/responsibility is given to me I run into a couple of problems. Because I don't necessarily know where to start I found myself putting off from working on the project and instead using my time to work on my other modules and other things. This meant that valuable weeks were being lost due to by inability to focus and do proper research. However as more time was wasted I then started to get worried which in turn lead me into starting the required research and soon enough I was making a lot of progress.

This has taught me that it is acceptable for me to be confused with where to start with a piece of work but it is not ok to do absolutely nothing about it. I found that eventually the best course of action for me was to write down a list of questions that I had about the topic and try my best to answer them. This allowed me to gain a first level of understanding into deep learning. The other factor that helped me the most was communication. My supervisor has always been really helpful and it was only my own fault that I didn't communicate to him my struggles in the early stages. If I had then I have no doubt that the initial struggles phase would have been shorter as he would've pointed me to the relevant sources that would get me started. So, in the future I will make sure that I ask myself the right questions about various topics I do not know and also communicate with those around me so as to make the most of my colleagues and seniors whether in an academic or business environment.

A skill I genuinely believed I improved over the course of the project is time management. Due to my previous point, my time management skills started in the worst way possible however as I grew more understanding in the project I started to allocate time efficiently. It was not an easy to task to manage the project as well as a lot of other modules including exam/coursework modules where there is also a small project element. However, it was made possible by efficient time handling and also giving myself various time slots of free time, which helped me perform better when nit was time to work as I felt re-energized. I believe I can use my improved time management skills in my future career as it is important to prepare for meetings as it helps you get the most out of them

Overall, I think my performance in this project has been quite good and any improvements I can make to myself will make the process perhaps more stress-free and allow me to produce work of higher quality.