Minjuan Luo ‘s Individual Reflective Essay

1. The experience of managing a software project/being a product owner/being a scrum master/being a team member (as relevant in relation to the roles you have adopted throughout the project)

When operating as a group, we separated the group roles in order to balance the workload and I am the scrum master who’s responsible for recording every scrum meeting and uploading them to blackboard. Being a scrum master is quite challenging for a normal second year student like me because I have to arrange a time that suits everyone to record the video every week.Reminding my other group members to come and join our meeting is what I do most often because they can be busy and forget this weekly due work. One of the group members will be absent sometimes due to some emergency situation and they will send me their part of the scrum. I will then have to learn how to combine two videos so that it makes more sense.

What makes me feel nervous before every scrum meeting is to check whether my device can correctly record everyone’s voice as I experienced a situation where my device went wrong and the whole group had to record a scrum meeting 3 times, and this makes me feel very sorry for my other group members.

Overall, it’s still a great chance for me to be a scrum master and I learned a lot during this period such as easily dealing with the emergency situation.

1. The experience of working in a collaborative project team

Working in a collaborative project team is quite different from working on a project on my own. A collaborative group means we will have to discuss a lot before starting the project in order to have a good understanding of everyone’s strengths and weaknesses so that we can split the work easily. That’s why we spent half of the semester meeting with our client and group members a lot just to make sure of the efficiency of our project when we started coding. We end up separating the whole group into an AI group and UI group. Each group will have someone who is good at researching and coding from the third year in order to teach and help the second year students who are less experienced. I am the only second year student in the AI group and I gained a lot of help from the group leader including solving my low accuracy estimated model’s problem.

Working in a group also means that we will have to make good use of version control. We built a repository in github and created two folders(aisrc and uisrc) so that the two groups can update their works separately without any influence from the other group. I was once not familiar with version control including branching my part of work and merging it back to the main branch after finishing the work. Updating our code frequently may help other group members have a better view of what steps have Idone and what they are going to do next.

1. Individual instances of issues or dilemmas

I have experienced two main problems when coding the deep learning models:

The first one is lacking experience of implementing deep learning AI models. Both me and the third year group leader didn’t know where to start and we were nearly giving up because we had only 5 weeks before the deadline at that time. Thanks to our new client name Salah who has a high understanding of CNN deep learning model and he gave us a short lecture about how the model uses different layers to update and teach itself. Building up the AI environment also took us a long time. We followed the instructions from Google to download Keras and Tensorflow for model training and this took us 3 hours to get it done.

The second one is that I met an unknown problem when I started training the LSTM deep learning model. It turned out that I can compile and run the training process without any error but the model estimate accuracy grew less and less in each epoch and it ended up with only 0.01 correct rate. I tried a lot of different methods of coding according to the rules for the LSTM model but some of them freezed and some of them didn't work. So I passed all my work to the leader of the AI group and hoped he could sort the problem. We finally found the problem was I did a lot of extra input formatting that the model didn't need.

1. Contributions to the project you are proud of

For the contribution that I’m proud of the project, I would definitely state that I finished the CNN model nearly on my own. After finishing building the environment that a deep learning model needs, the AI group leader assigned me to try to finish the CNN model with the Sequential API method different from the Functional API from the library that we are looking at. This means I have to do a lot of research to find how to translate every different layer from a functional method to a sequential method. I didn’t expect the program to run successfully but when I heard the model was successfully trained and the accuracy is about 99.97% I felt like I had a great achievement.

I also successfully used another method called class weight other than resampling to read in the ECG heartbeat data and the model ran well too. After finishing this project I can proudly say that I am able to implement an artificial neural network by myself using Python.

1. Realisations about your own working and learning styles

I was once not good at researching from the internet when I got stuck on some problems. Being a computer engineer means I will always get lost and don't know where to start writing my project. I will also have to deal with many different bugs that will show up in the program that I wrote. I would like to try to solve this kind of problem by myself or discuss the question with my friend and hope some of them may know how to solve it in the past. This is not a high efficient way to finish my tasks because this may cause a large amount of time but still don’t know where is the error.

One good way that I learn through this group project is that searching all these kinds of problems in Google will help me a lot because there are a large variety of websites built up for programmers to discuss and solve their problems such as StackOverflow and GeeksforGeeks. Some of the programmers may post similar problems they met and people who know how to solve it will try to answer that question. It helped me a lot when coding the deep learning model. What’s more, we can find many useful datasets for self practising and learning from the internet.

The reason why we were forced to change our first client is that she can’t provide us with a large amount of datasets in order to feed the deep learning model and make it self-learning. It was Salah who told us we can go to @kaggle and find ourselves any datasets we need including libraries that others have already finished.

I can then lead to the conclusion that making good use of the messages and knowledges from the internet may help me a lot in the future.

Minjuan Luo

20313326