

2 Peer Feedback and Reflection

The quantitative data below is a representation of the average evaluations by role (self, shadow, etc) type. Bars represent the evaluation of the team, lines represent the average from the course.

When interpreting these data, the absolute value is less important than the relative difference between inputs.

Figure 2: Quantitative evaluation of feedback

Note on calculation: the course average field is calculated as: $\text{ave}(\text{ave}(\text{self}), \text{ave}(\text{shadow}), \text{ave}(\text{tutors}) \text{ave}(\text{client}))$. Note that no bar (0) indicates no data. "0" or "baseline" is shown with a value of 0.2.)

2.1 Project Output

Reviewer

The team made some progress on the sound processing and localization but still far from a useable solution. Meanwhile, the team made critical changes in the image design and hence lagging the progress on these aspects. The overall output is impressive, but some of the work seems not going to be used in the new design. And this makes people worry if the team can meet the milestones it set. Many aspects of the design are plans and could not work as expected. What if one of the schemes does not work out? Does the team have related contingencies? With such a new design, the team might need a new contingencies plan in case something goes wrong, considering that the current plan does not really have much flexibility. Still, the team has done great jobs. Hope they can work out smoothly in the future.

Reviewer

Even though we changed our project design, from a four-camera stitching system to a single fish-eye unwraping system, it doesn't change much about what we will deliver in the end of the term, a 360 conferencing webcam. I am happy with this process because we are all very clear about what we will deliver and how it works in the end.

One of the concern that I am having is about the real-work user testing and validation process. From yesterday's audit, our classmate asked that what if there are two people speaking simultaneously, and where should the 360 pointer points to. It reminds me of that we never think carefully about the evaluation and testing process. We planed to test it by having a video meeting but we haven't thought of "How" yet. If our client wants a feasible solution of video conference and so dealing with multiple speakers at the same time is definitely one of our task. We may need to:

- 1) communicate with client and make sure if he wants a 360 projection system or a valid conference system.
- 2) design specific metrics for evaluation of our device.

Reviewer

We have been able to produce some prototype hardware and software while improving the documentation. While we have produced some results, this is far from been any usable, so we have a lot of work to do, something that we have put a lot of thinking is how to improve the value that we are offering with this project. This has really motivated us to see the project from different perspectives to get more involved in it. I think at this stage we should focus in starting to produce some final documentation that will be handed to the client and to the team taking over the project. This means we need to improve the documentation in the software section and specify the libraries need to run it.

I think we could also improve how the final output is going to be, I think some of the initials designs will change a fair bit, for all the additions we have done,

Reviewer

I'm perhaps underselling your progress for this response, but as a neutral viewer, I find your progress difficult to track. You often mention open source codes which you are using, I would like to hear more about these. Is there more than one option for certain bits of code, why have you chosen which bits of code, all that kinda stuff would be nice to see in my eyes, especially as someone who doesn't really know anything about software.

Along with this, something that was brought up in the tutorial was that your value proposition is a bit unclear. The output of the project itself is clear, but even with your answers in the tutorial I still don't exactly see where the "value" is in your project. This is something you could clarify perhaps on your landing page or somewhere for people to see.

You talked about delays in your project due to the camera swap(unlucky your client flexed on you like that), but again something mentioned in the tutorial was how did this affect the timeline moving forward. Is the project still on track, how has this effected the outputs if it all. The direction your project outputs/timeline are going is something I would like to see, particularly noting how the change in the camera has changed things.

All in all though great work as always keep it up (Y)

Reviewer

Currently the group is behind according to the initial Concept of Operations document due to the change in camera system. I am still concerned by the drop in quality of the camera system due to the use of a single 270 degree camera with 1080p resolution max, reducing the available resolution of the solution to 1/4 the original specification (depending on the specific cropping factor caused by taking out the centre of the image, being the roof). I would like to see an analysis on the perceptible difference in quality between the two solutions. While I appreciate the desire of the group to minimise costs and processing by taking this route, I would have liked

to see another analysis defending this decision. I can also see no evidence for ensuring that the new method of unwrapping the video in realtime will work on the RPi, as this process is not processing light, due to the requirement for fast floating point calculations, rather than simple pixel-mapping. The decision to go with a single 1080p camera only gives a resolution ~60% of the camera resolution of the Meeting Owl which is the client's inspiration (even though the eventual output is planned to be equivalent at 720p). I fear that the output image resolution will be far lower than anticipated.

The technical rigour of this project appears to be lacking in the documentation, and is expected due to the larger size of this team.

Proof of concept work has been undertaken for the microphone array, however no proof of concept work has been undertaken for the change of camera to ensure that the processing work that will be required is able to be achieved by the RPi being used by the team.

2.2 Decision Making

Reviewer

So far, our decision making process is acceptable. From the decision log document, I can easily track on the critical decisions and the corresponding reasons. It is a good summary and we should keep it up throughout the project. Meanwhile, Audit 1 gave us some points to improve and we have addressed our attitude and decisions according to the reflections. I feel like we are carefully dealing with every decision and so I am very happy about it.

A point to improve may be carefully treating client's decisions and suggestions. Due to the change of the design, he may lose some confidence on the team and so we do need to make sure his engagement in the decision making process, especially while he is away. I am thinking to deliver a weekly updated report for the client to demonstrate our weekly progress, and ask for his reflection and opinions. This will not only enhance our communication, but also set up a broad client engaged decision making process.

2.3 Teamwork

Reviewer

With respect to the assessment guide, the team seems to be functioning at an acceptable performance in terms of teamwork. Each member has shown to have a diverse set of skills, and together it has formed a strong team dynamic to tackle the requirements set out by the client.

With the team having agreed for each member to have different sub-team responsibilities early on, through the weeks it has been apparent that the team has a high degree of autonomy - each sub-team is happy to complete their given task and then present it to the team during team meetings to track progress with each other. While this has allowed members to maximise the use of their skillset for a particular field such as more technically oriented tasks, it does not necessarily support the development of new skills for members, which is presented as a key point to exemplary teamwork according to the assessment guide. In order to improve this aspect of teamwork, it is recommended that each member should engage more between other sub-teams than their own so that everyone is on track with all aspects of the project as a whole.

Reviewer

The team has made a lot of progress since audit 1, both audio and video subgroups have achieved a big milestone of the project. Each member of the team has different skills and everyone in the team is putting effort into this project. Additionally, the team has a good team dynamic since leader in the team allocates tasks fairly and everyone is happy to do own tasks. But there are also some things which can be improved. Since the new camera is not delivered yet, it is not possible for the team to test on the camera. However, some tasks can be assigned to the team members which can be done during the waiting time such as researching for the open source. Additionally, it seems that we are mostly integrating the existing open sources, the team can think of ways to add value to this engineering project, with innovations added in. Although it might need some new skills to be learned by the team members, it will definitely make the final product more valuable

Reviewer

The team makes a critical decision that they changes the design from multi- camera to a single fish-eye camera. The change makes sense from their research result in week 4 that the multi-cam design is unlikely to work.

However, the impact of this decision is not illustrated clearly, for example, is there anything in the plan that would be affected by this decision? The team member contribution is clearer than the first Audit. However, there are still some aspects that are absent. For example, who make the decision of changing design? Who take the reaction from Audit 1? Are these a teamwork or an idea from an individual?

Reviewer

The team is working well together overall, with discussion happening on a daily basis in the group chat, this is a good sign that the team dynamics is effective and provide a friendly environment that encourage everyone to voice their opinions on the matter. We take a democratic approach to solving problems, this aim to ensure the project is inclusive and everyone is happy with the decisions made. The team is currently being lead by one person mostly, and potentially some assistance will need to be provided on updating him on progress to ensure a smoother process for documentation.

The sub-teams are working independently at this point in time, but collaboration between the sub-teams should be encourage to minimise future problems around integrating sound and video components. The visibility between each sub-teams are also poor, as each team seem to have their own process to developing their component, this pose some concerns with how progress and change log will be updated. A unified model is needed between how sub-teams are documenting their process to ensure the project create an easy to follow process for future public development.

Reviewer

It appears that good progress is being made on the project despite delays in arrival of critical hardware. Work may be split up more effectively to ensure all members skills and strengths are put to best use. At this point it appears that a few members with the appropriate skills are taking on key technical roles while others in the same sub-groups are unable to contribute as much. It may be best to allocate some members with distinct roles regarding feedback and communication to make better use of their time and efforts and streamline the project as a whole.

Reviewer

Within sub-teams everyone seems to be making progress, however I'm worried that the magnitude of tasks is uneven amongst different teams and members. In particular, referring to the minutes from the 29th of March, the

sound team is tasked with “research on implementing noise threshold to prevent undesirable image switching. Prepare demo video for Audit 2”, whilst Documentation has to “update the repository decision making log and other supporting documents based on Audit 1 feedback” which seems like a massive difference in magnitude. Obviously the Documentation team also works on Assembly, but I think you’d be able to more evenly distribute tasks, or at least add a section where you review how each member themselves is going, so that if they’re idle they can help work on something else.

2.4 Communication

Reviewer

In terms of communication, the team meets twice a week with each other and meets with the client once a week. Additionally, we use messenger for communication with each other, email is used for communication between the client and us when necessary. In the following weeks, email will be mostly used to communicate with the client because the client is away for several weeks. For the internal meeting using messengers, I will suggest that we record screenshot of the key decisions. Sometimes we miss the things in the messenger which have been uploaded or discussed, this is also the reason we should record the internal communication. For communication in the sub-team, a smaller group chat is possible for discussing some specific topics, additionally, this will help the reviewer to trace the progress and the teamwork of each person in the team. Another point is that we can contact the tutor and get some constructive feedback from him, which will make sure the project is on right track.

Reviewer

The internal communication of the team is better than first Audit. The team makes decisions in such a way that every team member is aware of them. It is good to keep this kind of communication method. And the team communication with clients is clearer than first Audit. The critical decision associated with the input from client is available on the repository now. The team also takes action from feedback from Audit 1 that they make a more clear team role for recording the communication process and show it in repository.

The communication quality may be improved if the team makes a better summary of communication and the primary conclusion for each team internal communication and communication with client.

Reviewer

Email and weekly updates in repository for client communications - I’d like to see logs of emails in the coming days to make sure you’re all good. I’d suggest taking your critical decisions from your meeting minutes and sending him that with a small justification. Otherwise looks pretty good, I’m satisfied that you’re all communicating quite well. Once again your minutes are excellent, you’ve got your review, objectives and discussion, with decisions made.

To nitpick, I’d like to see more evidence of communication between sub-teams about problems they’re facing and progress updates. This could be invalid. Take it how you like.

2.5 Reflection

Reviewer

The team has a clear reflection on the feedbacks. The document showing response and upcoming action to the feedback is good evidence that the team really thought about the evaluators' suggestions. Hope these feedbacks can actually help the team rather than just some formalism. Such a documented reflection is supposed to help with the team's future development. One suggestion could be that the team may "grade" the feedbacks with respect to their usefulness to the team. Probably give them a color indicating how greatly it will change/shape your decisions with the project. Also giving reasons to why some of the suggestions are important and others are not can help you understand your project better and from a higher view. What is more, the team seems not considering the compliments in the comments. Knowing what you have done right can also be helpful. Keep up the good work and best wishes.

Reviewer

Overall the team is doing well in terms of reflecting on the feedback given by the tutors and shadows from Audit 1. After the Audit, the team had dedicated a specific meeting time (meeting log 29/3) where the given feedback was reviewed as a team, with relevant response and action items being formulated for the various viewpoints given. Some of these responses have been put into action as evident of the meeting log and ReadMe. File, which is setting the team to improve in the right direction.

According to the assessment guide, something that may be lacking in the team's reflection is the construction of processes for external validation, such as additional review processes from external stakeholders other than the client. To improve this, it is suggested that the team get in contact with other teams to view each other's repository for further suggestions and review outside of the audit, which will enable both teams to have an additional level of accountability.

For the next audit, the tutor has also strongly recommended that the team consider the proper value proposition of the project - what does the device essentially offer compared to other web camera devices, what is its innovation, and to what audience? It is highly recommended that the team think about this concept, and formulate a proper value proposition prior to the coming audit.

Reviewer

The team reflected well based on previous audit feedback and created a list of action items based on those comments to enhance our process. The team is doing well surrounding the feedback but documentation is still lacking, it is hard to keep track of what's happening on a weekly basis and decision made. An important component that came out of last audit is the creation of the decision log and I think what the team has implemented is well thought out. Similar change log will hopefully be implemented for the software side of the project, not just hardware and admin.

Currently, progress on the action items created are still lacking and still need to be addressed. This mostly falls into documentation and the process will need a revamp to ensure it meets all the requirements. The other aspect is the division of work, concerns were raised about how work are being divided and still need to be acted on by the team, to ensure work is divided equally. If the team feels that work division is sufficient, it would be nice to see a log of who contributed to what tasks, this can potentially allow members to identify if they need to contribute more to the project.

Reviewer

The team has done some great job in the little time since last audit. The progress is steady and it seems to meet the group expectations within the range. I think there are some stiff that could have been improved, like i think it would be good to divide the documentation in more team members, because with such a steady progress it seems it is getting harder to maintain everything contained to only one person. I think each team should start focusing on producing some final outputs that can be presented in the end to client and the new team taking over the work.

I like the high motivation of all the members, every meeting every member is willing to collaborate and put ideas, and also willing to listen to others idea and build on them, I like this dynamic, so there is not one person who is imposing the ideas over the rest, all decision go through discussion of the team or at least the sub team involved.

Reviewer

The team constructed a list of actionable items based on feedback received after audit 1 and it appears that this has informed much of their progress since that time. It is difficult to deduce whether all of these action items have been completed but obvious ones appear to have been acted upon appropriately such as the creation and filling of the formal decision making log. Maintaining good documentation of decisions and progress as well as honestly reflecting on design decisions will be important for the next stage of the project.

Reviewer

Excellent work, you clearly read through all the feedback careful, acknowledged it when necessary and rejected it when it was not. It was good to see you take advice on board but still put a foot down if feedback was not useful.

Moving forward it's important to keep up this high standard you have set for yourself at this second audit presentation.

Reviewer

The team appears to be acting on the feedback provided to them, and have responded to misguided feedback. Systematic reflection through the process of development does not seem to be occurring, or at least is visible in the repository, which should be happening in a group of this size in addition to the reflection that occurs when roadblocks or problems are encountered. No hallmarks of reflection above the baseline indicators are present. The client could be made more transparently involved with the reflection process, which should provide the group with a more diverse set of opinions when determining the future direction of the project.

I appreciate the breakdown of the feedback in a table and responses, however where feedback has been taken on board, I would appreciate linking to any new documentation where that has been deemed the solution to any feedback that has been provided.

3 Tutor and Client Feedback

3.1 Aspects Done Well

Tutor

1: Action on feedback was clearly articulated. The limitations of the design were highlighted well and the change in design was very well explained. Good analysis of the change in design based on financial and technical analysis well explained as well. a good demonstration of the limitations of the original design. The actual demonstration was good. The output in terms of sound capture and sensing is good, and the progress is acceptable. The project feedback has been nicely converted into action items and changes have been made, which is good progress. Decision making has been well tabulated now based on the feedback that the team had received. Important changes have been highlighted in the repository in the meeting minutes. The plan going ahead in the next couple of weeks looks good and the team seems to have a good idea of the path ahead.

Client

The team has considered various solutions to the project topic and has suggest good alternative to the original plan to make a more efficient system.

3.2 Aspects to Improve

Tutor

The change in design was not well explained as, to how it overcomes the limitations of the previous design and fulfils client's expectations. The new challenges are detailed but again not researched enough to make it convincing that the team will be able to achieve the current objective. The team has fallen back on the schedule that they had initially planned but, no contingency plan or plan B was demonstrated. It might be worthwhile to discuss the revised timeline with the client and show it in your decision log or communication with the client. The design has changed completely from the initial design and those changes seem to be significantly affecting the final outcome of the project, I would suggest the team to still focus on delivering the key value to the client. The team looks lop sided in terms of the work that is being done. It would be better, if the work is more evenly distributed and is communicated well during the audits so that he shadows can see it as well.

Client

The team has performed as expected. Maybe should push themselves slightly to improve the planned design so that they can add more value to the system required by the client. But understanding that in a 12 week semester, the team is lacking of time to do extra than what is required by the client.

4 File Changelog

2019-04-19:

- reformatted backend for docker and gitlab-ci. No output changes expected.

2019-04-06:

- Initial commit with 2019_S1 PA2 data