

UCL Peach Group 39: Reality

Bi-weekly Report #9

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1 Overview of the last 2 weeks

Over the last 2 weeks we were busy with coursework for other modules so there wasn't much progress made compared to previous weeks. That said, we still had a chance to meet several times (including meetings with the 1st year team). Below you can find the details of decisions made and actions taken.

- We held a meeting with the first year team where we discussed the progress both of our teams have made on the web app. We've shared our code, discussed mockups, and interaction between the API and the web app. We made sure to brief the first years on the current state of the overall system, including details about the new holographic patient case concept.
- We've begun producing short tutorial videos that should make it easier for new users to work with our system, especially the HoloLens application. The complete set of tutorials will introduce end users to the idea behind our application, using the web app, HoloLens gestures, using manipulation modes, data marker management and others.
- Together with the first year team, we've completed implementing user authorisation in our web app. Although some parts of the prototype still just mock the functionality instead of having the actual implementation, the prototype will soon be ready for demonstrations.
- We've extended the API specification to cover holographic patient cases. During the process, we've made several adjustments to our initial design of the API, hence improving the overall architecture of the API. This was also useful for the first year team, who used the specification to mock the API and test their application.
- We've begun improving the user experience in our HoloLens application by adding gesture guides which tell the user which gestures are appropriate for certain manipulation mode and how they should be used.

2 Tasks completed

- Discussed web app development with the first year team and briefed them on requirements
- Begun producing short video tutorials about our system to make remedy the steep learning curve associated with HoloLens usage
- Extended backend API specification to handle holographic patient case management, including model uploading, data marker management, adding collaborators, etc.
- Begun improving user experience on the HoloLens application by implementing gesture guides to show users which gestures can be used with various manipulation modes.

- Added user authorisation to the web app prototype
- Begun integrating the neural network for CT scan conversion into the backend API

The last couple of weeks were reasonably slow due to the amount of work we had to complete for other modules, but now we're back on track and should be able to meet our goals by the project deadline.

3 Problems encountered

- Producing unambiguous tutorials for medical specialists with varying levels of technical expertise is challenging when of the objectives is to keep tutorials short. We might have to consult our end users to confirm that the tutorials are indeed easy to follow.
- Considering that we've already made some progress on the web app, we have to sync our progress with what the first year team has made. This will involve picking which pieces of code from our and their implementations will end up in the final application. This might prove challenging but should increase the overall quality of the final product.

4 Plans for the next 2 weeks

- Finalise the specification for the backend API
- Implement holographic patient case API end points as described in the current API specification
- Produce first iteration of tutorial videos for the system
- Continue web app prototype development in collaboration with the first year team
- Continue adding UX improving features to the HoloLens application
- Finalise integration of the neural network into the backend API

5 Individual reports

5.1 Timur Kuzhagaliyev

In the last 2 weeks I've focused on improving user experience of our HoloLens application and kept in contact with the first year team to brief them on the project and their responsibilities in our team.

In terms of user experience, I begun developing gesture guides for manipulation modes that appear when user enters any manipulation mode in the HoloLens application. These gesture guides tell user what gestures are supported in the current manipulation mode and how they should be used. I've also begun producing short tutorial videos to help users to get started with our system. Hopefully, these 2 features together will make our application easier to use and will decrease the initial confusion users experience when trying our application for the first time.

I've also been liaising with the first year team to make sure they have the updated requirements for the system. I discussed mockups and their suggestions with them, filling the gaps in their knowledge of the overall architecture of our application. I also reviewed their code and helped them to find the right tools for the job and fix issues they were encountering.

5.2 Fraser Savage

Over the past two weeks most of my work has been in modelling and documenting the ways through which the HoloLens and the web application can work with Holographic Patient Case, as well as finishing some tasks from the previous sprint.

Data validation for several fields related to the User Model in the application has been implemented, with the appropriate tests being created to ensure that the validation meets its requirements both now and in the case of future changes.

With the Holographic Patient Case functionality of the API, most data models are either complete or nearing completion and the relevant endpoint documentation refers to them. Once all the data models are produced the endpoint documentation can be completed to include references to them where appropriate, while detailing what users of the API will need to provide to achieve the desired result.

In the upcoming sprint, I will be completing the models and the endpoint documentation as necessary, before beginning to implement the functionality described in the documentation. If time allows for it, I will also be considering how we might incorporate Lorenz's software into the API.

5.3 Laura Foody

In this last sprint I finally made a successful request to the login API. I had to fix my ajax request to expect the correct content type. When then working on getting the webapp to store the token in localStorage I encountered an error and realised that my ajax request was not successfully retrieving any data from the API. I tried modifying the request but will now need to work out how to store the token in order to properly authenticate a user. I found a npm dependency called axios which abstracts away an ajax request so that it is one command to open and send an ajax request, so I will try to use that to configure the authentication.

I also finished building the "edit user settings" form and page which should allow users to edit their details after they logged in. Besides fine-tuning the ajax request to correctly retrieve and store the token I will also spend the next sprint working on building the "Patient Cases" page and working on some of the styling of the webapp so that it looks more like the peach design guide.