Group Project Report	Group 18
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Project Title	AI – Resume
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Project Background Information

The original tender of the AI Resume project, required us to create a service which would allow users to get an understanding of a CV from a job applicant without having to actually read the CV. This would be through the interaction with an avatar via text input as well as speech. This avatar was to be embedded within an electronic application and the speech dialog along with other elements that would be built up using Watson dialog service on Watson Bluemix (now known as IBM Cloud). Our original understanding was that it should be able to process any given CV and then be able to provide output based on the CV chosen. Other requirements were; that the avatar should have a selection of meaningful backgrounds to allow demonstration of personality, that the owner of the CV should be sent an email when their CV is read, and also that the system should be able to provide a personality profile using the Watson personality insights service.

Throughout the course of the project there were a few changes made to the requirements both due to agreements and conversations with our sponsor and also due to technical difficulties we faced. The first change was very early on as we had our first few meeting with our sponsor we talked more about the actual functionality and what he was expecting. He admitted that creating a system to analyse any given CV would take considerably more time than we had and agreed that, although admiring our enthusiasm, he was expecting a system to demo that this could be done. This meant he wanted us to base a mock system on one CV and make the system appear to analyse the CV but instead we could pre-program the backend as to already have the information

inserted. We therefore requested information from our supervisor to create a CV that we could use for their information.

The requirements for the avatar also changed during the project as we agreed that instead of a customisable avatar for the user to modify, that we should have a choice of perhaps 3 avatars. These 3 would have different styles; casual, smart and wacky and the applicants would choose which they wanted to represent their personality.

Later on in the project when working on the speech input and output, we encountered several issues and spent quite a lot of time trying to understand and learn about the service. When we provided feedback to our sponsor about the issues we were having, he explained that the speech input within the Bluemix service was not always reliable. Therefore, he suggested that we should aim to get the text-to-speech working as this was often more reliable, meaning our avatar would speak to the user but the user would have to reply with keyboard text input.

Therefore, the final requirements for the project ended up looking as such:

- Create 3 styles of avatar
- Have a system which responds with answers about a single CV
- Allow the user to interact with the avatar via text input
- The avatar should respond with both text and audio output
- Use Watson personality insights to provide a personality profile
- Send the owner of the CV notification that their CV has been read

(500 words maximum)

Progress on Work at Time of End of Contract

We believe that we have been able to achieve an estimated 80% of the requirements within our deliverable. It needed to work on multiple platforms therefore we have chosen a website which has a chat window for the user to interact with our avatar/ system via text and speech input and output. Even though we were told that it would not be realistic to have speech to text used within out project, we still managed to integrate it and get it to work well with most types of microphones, therefore this allowed us to fulfill an extra criterion that was removed from the original tender. Using this, users are able to find out about several details within our mock CV, therefore demonstrating how this would work when analysing any CV. We have aimed to make this an easy process by using the option to write full responses or by using numbered lists when giving the user options, this allows for a quicker understanding of how to use the chat system.

As we are basing our application on demonstrating one CV, we have chosen an avatar to represent this person and therefore have not provided the ability to choose between avatars. However, we have created 2 different styles of avatar and two backgrounds that we could have picked, which also include minimal animation, showing that if we had allowed users to choose styles in this application that they would have the choice between avatar styles. We feel that this as well as the choice of background would allow users to display personality.

Originally we had planned to design 3 interactive avatars for the user to choose from. However, due to the time constraint and encountering issues with the text to speech functionality our application contains 1 interactive avatar and another avatar which does not yet have animation applied. This would be something we would work on in the future if continuing the project.

Adding on, we have managed to use the personality insights to an extent in this project. Our sponsor advised us to have a look at the IBM personality insights demo as that contains all the information that is useful to us. On the other hand, the issue we encountered is actually trying to get the required information for this as a .json file that would be imported from John's twitter without creating a whole new app for twitter and by just accessing the twitter API. In the end we managed to get the required information however we have not yet been able to visualise the data due to minimal difficulties however we are planning to get this done before the Open Day.

Future plans for the project

If given more time with this project, we would have looked at making this AI resume work for all resumes that were uploaded. Since we were advised this would take a lot more time (more than a year) and a lot more work, it was not realistic for us to get our application to work with all types of resume. However, we would definitely be up for the challenge of making this in a way in which it is able to analyse any given resume.

Another thing that we would definitely do is have a choice of avatars for the user to pick from. Since we were only analysing one resume in this project, it was reasonable to have 1 avatar design representing that person with a selection of backgrounds. On the other hand, if we had the time we would have a selection of avatars, in which you can adjust certain features, such as: Eyes, mouth, body, nose & clothing. This feature would make the avatar representing the resume candidate more personal, since they would be choosing features that represent them.

As for the personality insights implementation, we should have allowed ourselves more time to look into this. In reality we believe that we looked into this service too far into the project due to not taking into account other module projects and personal projects within our planning stages. Whereas, we are still hoping to get this part of the project implemented to an extent, by having a sunburst chart representing the data before the Open Day.

Another decision that we made early on in the project with our sponsor was to make a website based application, this was due to our current experience at the time as no one within the group had worked with other platforms. However, we understand that being able to have this kind of application could be useful on mobile platforms, enabling employers to assess applicants on the go, therefore developing the application to work on Android and IOS devices could be an attractive extension. This would require more skills and therefore why we have identified it as something we could be a future plan for the project.

Conclusion

In conclusion, despite the issues that we have faced throughout the project, we consider this project to be a success since we managed to deliver around 80% of the requirements effectively. On the other hand, we feel that if we were to take on the future plans for the project, we would be well prepared from this learning experience to deal with the encountered problems. We are extremely happy that we have taken on this challenge and delivered a product we are all proud of as a whole and as well as this, we are glad we got the opportunity to work with a highly respected company, which IBM is.

(1000 words maximum)

Documentation of the project is here.	https://drive.google.com/drive/folders/0B2xSQfk5N_cjTHZQQ0UzNW0zWUU?ths=true
The code repository is here	https://github.com/T-cherry/AI-Resume
Other project management documents (e.g. Trello boards) are here.	https://trello.com/b/v3jjfdoI/cs-group-project