Individual Project Report

|  |  |
| --- | --- |
| Your Name: | XU JIACHEN |
| Certificate: | Intelligent Software Agents |

# 1. Personal contribution to group project.

For the Intelligent Software Agent group project, our team built an Intelligent Job Hunter system to provide the cover letter generation service for users, which can automatically generate suitable cover letters for different job positions based on user’s resume

In this project, my contribution is mainly in two aspects.

1. System architecture and integration.

2. Design and Implementation the frontend and backend of the application part and database of system.

# 2. What you have learnt.

In this group project, I am still a full stack engineer and architect and responsible for the development of full stack applications and integrated WeChat Subscription Login. I learned a lot in this aspect. Although there are many examples and use cases in the industry by scanning the QR code of WeChat Subscription and login system or website, there is no open source solution based on python. So, I could only analyze those methods and design the solution by myself. In my architecture and implementation experience, this is the first time that I spend a lot of time on the user login and registration. Because our system needs a WeChat Subscription as Chat-Bot platform to send the job position information and communicate with users, so our system must be able to get the user’s Openid in our system’s WeChat Subscription and save into our system, Furthermore, we need to simplify users’ actions. If let users login in our system, and then subscribe the WeChat Subscription to receive messages and notifications, it will make users feel that chatbot is just a by-product of the system and has not been truly integrated into our system. Therefore, my method is let users complete both the register of our system and subscribe the WeChat Subscription for receiving notification through the login process. Through a lot of tests and studies, I successfully completed the login solution based on WeChat Subscription, which integrated WebSocket and WeChat platform services, and provided users with smooth and simple login and registration process as far as possible.

On the other hand, while in the group project, I am not responsible for the RPA and IPA part, I still learnt a lot from the advantages and disadvantages of these technologies.In the RPA part, although TagUI is a very good RPA tool, but there are still some compatibility problems and limitations, such as, not like selenium, TagUI can’t change and control the browser's to clear the cache and website login data. In our project, there is a case that for multiple users' job position data collection, the previous login user did not exit after the `t.close()`, leads to repeated fetching from same user’s email. In the part of IPA, our team adopted NLP + Template method to generate cover letter, because there is no functional Cloud AI or Local AI with such function. Meanwhile, we have investigated many methods, such as Named-Entity recognition, but the effect was not very good. So, we can only use NLP + Rule-based method to generate based on separated templates. Through this process, I feel that I still need learn a lot of knowledge in the NLP field. For example, whether we can integrate multiple models and combine templates to complete the process of NLG, which certainly requires a lot of time for design and training, but if we can achieve this method, our group project will be more intelligent and provide better cover letter generation services.

# 3. How you can apply the knowledge and skills in other situations.

I think RPA and IPA both are very interesting and powerful tools or method to let computer handle those time-consuming tasks and repeated tasks, but they still have some limitations. For example, They are very strong for the web-based data collection but not very good for the image-based or the code-based data collection. Furthermore, I think RPA and IPA is the transition part of the system which changes from the server separated systems to an End-to-End system. As long as there is not a overall system, RPA and IPA technology is still very useful. I think I will use RPA and IPA technology on the dataset creation and decision making system for the project leaders or department leaders. Because there are many web-based applications in a company or a department, they spend much time on collecting information from the different web applications. RPA and IPA can help them to generate the overall report and collect the data