**Meeting Time:** 9:00 am – 12:00 noon 2022.12.05

**Attendees:** Xia Jiang, Zhen Yang

**Meeting agenda**

1. Reviewed progress made in the past week.
2. A thorough test of the current version of iMedBot-Dev, both prediction and model training.
3. Made comments and suggestions based the testing results.
4. Work assignment.

**Issues/Questions and Comments**

Jiang’s new comments based on the testing of iMedbot-test done during today’s meeting.

Regarding Model Prediction:

1. The values of a predictor should be ordered. For example (See below), the values of the t\_tnm\_stage, n\_tnm\_stage, should be ordered according to how it was explained and/or common sense. Graphical user interface, text, application

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1. Need to fix the problem we discovered during meeting, with which a user can’t go back to the previous page when click on the 🡨-- key, rather it showed something like this:

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1. When an error message shows up, and the user clicked on OK, the prompt should go back to the spot where the error occurs. For example, when error message is generated due to the fact that the user-selected dataset does not match the required dataset for 10-year model training (see below), then we should go back to the dataset selection page rather than the “prediction or model training” page as it showed during the testing.

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1. I was not able to upload the dataset that I choose for the 10-year model training, why? I assume we should be able to train any dataset to obtain a model, as long as we have a target (class) feature and a group of predictors in the dataset.

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1. Need to fix the “logic” of the program, perhaps in many spots. For example, during the test, my dataset was rejected, but I can still click on the “view your dataset”, then once a user clicks on the button, the program paused. This should be fixed.

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As shown in the figure above, currently, the program stopped working at this point.

**Ongoing tasks that cover more than a week**

Revise and Improve IMedBot

Tasks will include but are not limited to the following:

1. Revised the current version. Many things, and I will write about them in the specific task for the coming week.
2. Resolve the “deployment” crisis. Currently, we all work on the main branch. When we make a change and push to github, it will trigger an automatic deployment on the AWS site, in which case AWS will charge us. Another problem is when there is a crash in the development work, the main branch will also be affected. Potential solutions: 1. Look into writing our own deploy pipeline without using the paid service (Conder doing this eventually perhaps next year, when you get really familiar with the system). 2. Looking into established a developmental branch, which will not be deployed automatically, but with which we can do development and testing work and conveniently merge it to the main branch for deployment once the new features are confirmed.
3. We will incorporate google analytics to the iMedBot.
4. We will develop a user online survey for the model training service. We currently have a simple online survey for the prediction service, but we don’t have one developed for the model training service call. We plan to further enhance the current survey and develop a new one that is tailored to the model training service
5. We will develop a user registration system that is currently missing;
6. We will develop a backend database during the expansion project. The iMedBot currently does not have a backend storage which can be used to store proper information such as user registration information and user feedback collected via online survey results. The information stored in such a database can be very useful to further improve the quality of the serviced provided by the iMedBot;
7. We will develop an online user manual during the expansion award;
8. We will develop online videos for further user guidance;
9. We will develop a Trello board that would be connected to our current github repository for iMedBot. The Trello board will further promote user-developer interactions and encourage the user involvement in the development work such as testing and providing feedback in real time. It will automatically update the users with the newest development of the iMedBot and inform the developers the user feedback.

**Jiang’s Comment Based her testing of the iMedBot-Dev on localhost from last meeting and evaluation of the work.**

**In terms of prediction service.**

1. The number of predictors of iMedbot does not match the number of predictors in our DNM-RF models. This needs to be resolved.

Jiang’s evaluation: This is not done.

1. The current tool tips were improved compared to the version I testing on 2022.11.18, but still they are **not linked** to the predictors so that a user can understand our definition of the predictors, or they are still meaningless. **See below for example;**

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This information (i) tip does not convey much information, and so can be removed.

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This information tip has more content now, but it is hard to be noticed by a user, and it would be hard for the user to guess that it is about the meaning of the term DCIS\_level. I had to hover around and waited quite a while to bring up the information. I would suggest that find a way to allow the information show up when a user hover around the term “DCIS\_level” itself.

The problem was seen for all the other predictors, and they all need to be improved.

Jiang’s evaluation: Zhen Yang has done a good job on this based on the test I did during the meeting.

1. By the end of prediction, we should prompt the user for what the user can do next and let the user choose from them other than bring up a survey immediately (see the screenshot below). Survey should show up only if the user chooses to leave/end the task. Besides, the survey is not forced, you should first ask whether a user wants to do survey first.

Jiang’s evaluation: Zhen Yang did not do as expected because he misunderstood the request. I would suggest again that we should ask the user whether they want to predict for another patient, if they choose no, then we can prompt for a survey.

1. Survey should have more content rather than just stars, and should allow a user to make suggestions to improve the program.

Jiang evaluation: Zhen added a text box for user to leave a message. But survey results and user feedback was not stored.

1. Survey results should be stored in a database.

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Jiang’s evaluation: This work is not done, but Zhen Yang claimed that he is still working on but there are bugs that he need to resolve.

**In terms of the model training service:**

1. Should the next step (after a user selects the model training service) is to let a user choose from 5, 10, or 15 year programs for doing training?

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Jiang’s evaluation: This problem was fixed, but there are more problems. See the new “comments” based on today’s testing.

1. Currently, only the “End Task” works (see below) for the iMedbot-Dev. But as I recall they all worked for the iMedBot for the 15 year. Should make all functions work again as expected.

Jiang’s evaluation: I was not able to do the test with my own dataset, because the dataset was rejected.

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1. Currently, only the “Run model with example dataset” works (see below). But as I recall they all worked for the iMedBot for the 15 year. Should make all functions work again as expected.

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Jiang’s evaluation: I was not able to do the test because my dataset was rejected.

**Specific tasks for the coming week (continued with the previous meeting assignment)**

1. Get familiar with the current iMedbot and its system, from all aspect including the AWS site (using the account information provided and the manuscript we submitted as starting resources). Not done, but extend the new deadline to 2022.11.21. Done based on self-reporting.
2. Jiang’s suggestions: based on today, you are still not familiar with some of the backend components. For example, when I asked how the program retrieves the dimension of the predictors of a user-provided dataset and pass it the model training in the backend, you were not able to answer the question. You should be able to answer my questions during the meeting and provide evidence for your answer, rather than tell me that the answer is located on another computer which you couldn’t show. Consider using Pitt OneDrive, so that you can share files with our github repo conveniently. New deadline is 2022.12.5.
3. DNM-RF models, we should have 17 predictors. This was assigned previously but not done. You already have an idea to fix it, and please do so. New deadline is 2022.12.5.
4. See Jiang’s new comments under **Issues/Questions and Comments** for new assignment of this week, which is to fix the problem identified by Jiang based her test during today’s meeting. Deadline is 2022.12.5
5. Based this meeting, we need to allow a user to train any models using their own dataset. We should confine our model training to a particular format of a dataset. Based on explaining the previous code wrote by Chuhan, it seems that this is already done. You need to recover the model training logic to the previous status before you took over, but fixed the problems that you identified for the previous version as you claimed. If you claim that you fixed any bugs from the previous version of program before Chuhan left, then you need to be able to describe the bugs and how you fixed with evidence, and show code difference side by side.
6. You claimed that you created the .h5 files for the 10 year and 5 year models (prediction service) without much help from Chuhan because she did leave a document for you. Go ahead document all the procedures you used to generate these files and make them available to our github repo. You should develop a habit of documenting all procedures that you spent a lot of time on so that you don’t repeatedly spend the same amount of time next time you do the same task. I will check on and test your procedure next time.
7. Document the procedure of establishing the iMedBot-test AWS Elastic Beanstalk application. You can use the procedure that I provided called “WorkWithAWS” as a template, which should save you a lot of time. Just document the steps that are different from what were documented in the WorkwithAWS.
8. Continue to finish the previous task with deadline of 2022.12.05.

**Current status of the Specific tasks for the coming week**

1. Finish all the partially tasks assigned previously (see previous meeting notes, and the comments above). All prediction and model training functions should work as expected, and model train should be done for all 5 year, 10, and 15 year each separately. Expect to finish before 2022.11.28.

Jiang’s comment: We have 17 predictors for the DNM-RF model, but only five of them are in the iMedbot prediction service. I asked Zhen Yang to look into this and fix the problem last meeting, but he did not do what I asked. The prediction services looked unchanged based on the testing he did during the meeting this morning. As to model training, Zhen Yang claimed he spent a lot of time to fix the bugs, but he was not able to show me exactly what the bugs are and how he fixed it. The model training services looked no different to me based on the testing he did during the meeting this morning. The iMedbot stopped working properly after he took over. Emailed Chuhan to see whether she can recover it to the previous version before Zhen took over, so that we can better evaluate Zhen’s work.

1. Further revised the “appearance” of the iMedbot-dev based my comments above. Expect to finish before 2022.11.28
2. In term of number 5) above, that is not done, I suggest that you establish a new development (testing) website, so that you can deploy the iMedbot-Dev to the new site, but without using the paid service from AWS. In the next meeting, we should be able test iMedbot-Dev from internet rather than from localhost. Expect to finish before 2022.11.28. This was done.
3. Fix the current deployment of the iMedbot so it works as before. If you can find the problem and fix it rather than simply use git to go back, that is better. Expect to finish before 2022.12.5.
4. From on, record in details important procedures of the development work and how technical issues being resolved in a document named as “TechNodes.docx” (place it under the docs folder. For example, you should document how .h5 was generated after you get the information from chuhan, and how the unpaid deployment service is (will be) set up. Expect to finish before 2022.12.5
5. You can start develop the online user manure now as doing the development work (see the tasks for more a week). You can find examples from internet resource. Expect to finish before 2022.12.5.

**Less urgent tasks**