**Meeting Time:** 9:00 am – 11:40 am 2022.11.21

**Attendees:** Xia Jiang, Zhen Yang

**Meeting agenda**

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

**Issues/Questions and Comments**

**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.**

**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.
2. 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;**

**Graphical user interface, text, application, chat or text message

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

Text

Description automatically generated

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.

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.
2. Survey should have more content rather than just stars, and should allow a user to make suggestions to improve the program.
3. Survey results should be stored in a database.

Graphical user interface, text, application, chat or text message

Description automatically generated

**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?

Graphical user interface, text, application, chat or text message

Description automatically generated

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.

**Graphical user interface, application

Description automatically generated**

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.

Graphical user interface, text, application, chat or text message

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**Specific tasks for the coming week from meeting 2022.11.18**

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. In terms of the prediction service, change the user input prompt to meaningful words. Not completely done, but extend the new deadline to 2022.11.21. Partially done, because the number predictors is only 5. But for DNM-RF models, we should have 17 predictors. See my comments above
3. Add tool tips to explain the meaning of the input feature (predictor). Not completely done, but extend the new deadline to 2022.11.21. Partially done, see comments above.
4. Add 10 year and 15 year. Not done, but extend the new deadline to 2022.11.21. Only partially done, see my comments above.
5. 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. Use the example deployment pipeline Jiang provided and internet resources as a starting point. Not done, but extend the new deadline to 2022.11.21. Not done. Needs to continue to work on this (see the new work assignment).
6. You should start to use the iMedBot-Dev that I created for you for your development work to avoid interrupting the current published website (as what already happened, in which 15-year prediction stopped working) . Is doing this. Good!

**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
2. Further revised the “appearance” of the iMedbot-dev based my comments above. Expect to finish before 2022.11.28
3. 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
4. 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
5. 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
6. 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.

**Self report progress**

Zhen Yang weekly report 11.21

1.All recent work is done in the new branch imedbot-dev.

2.As for the tool tips and user input,

1)Fix the problem that the conversation will pause after choosing the tumor size.

2)Attach some explanation for each of the input feature for users to understand what it means.

3)find that discrete-to-digital map is different between years, so I write two separate versions for 5 and 10 years. Also I modify some front-end javascript code to adjust the value related to each pattern according to input treatment years.

3.As for the model of 5 and 10 years,

Create model according to the hyperparameters of best model of 5 and 10 years and fit the models using dataset alpha240.

Table

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Save the model and add it to imdebot-dev branch. After testing the models they are added to backend coding part.

4.make some improvement for human-computer information like deleting useless tip icons.

Future work thoughts from me:

1. as the project expands and assignments get harder, more modules will be added such as python package, analytics tools and database, environment of aws may need changing. I should pay attention to it when merging.
2. I think more questions of the bot will be added so previous requirements should be meted and checked regularly.
3. 5,10 and 15 years models have more input dimensions than 5, which means some of features use default values. Maybe some more questions need to be added to the bot such as demography features of users or other medical information related to breast cancer.
4. 4. fix the problem that training part didn’t work after last meeting.
5. Models may need to be updated according to the progress.
6. I need to pay more attention to human-computer interaction, not limited to problems listed in last meeting.
7. I should improve the efficiency of contacting cause I waste some time in succeeding in creating the models for 5 and 10 years.

**Less urgent tasks**